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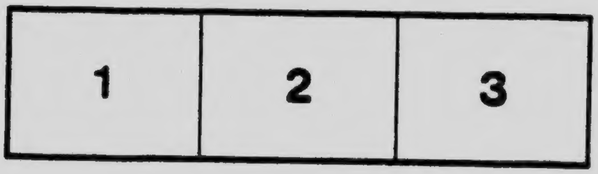

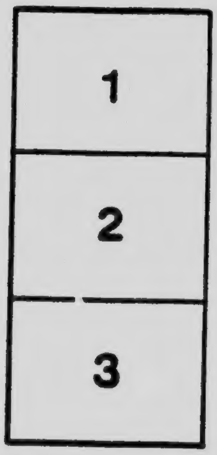

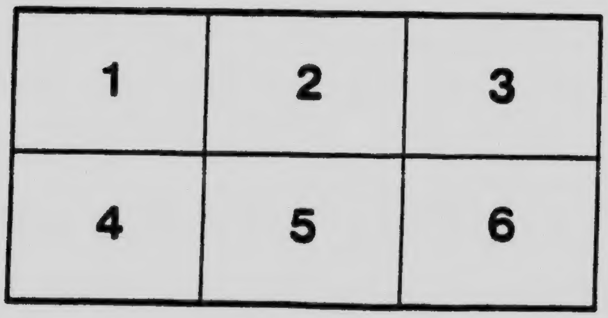

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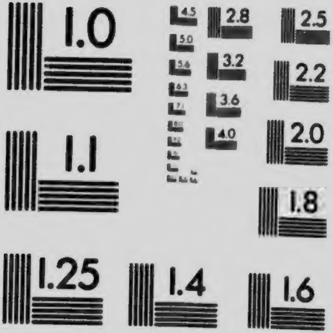

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MINES BRANCH
EUGENE HAANEL, PH.D., DIRECTOR

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# THE PRODUCTION OF IRON AND STEEL IN CANADA

## During the Calendar Year 1912

**JOHN McLEISH, B. A.**
*Chief of the Division of Mineral Resources and Statistics.*

OTTAWA
GOVERNMENT PRINTING BUREAU
1913

No. 247

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# ADVANCE CHAPTER OF THE ANNUAL REPORT ON THE MINERAL PRODUCTION OF CANADA DURING THE CALENDAR YEAR, 1912.

*(Tons used throughout this report are short tons of 2,000 pounds, except where otherwise stated.)*

# IRON AND STEEL.

## INTRODUCTORY.

A review of the statistics of iron and steel production in 1912 embraces a recital of conditions similar to those which have affected this industry for a number of years past. Notwithstanding the rapid increase in production by Canadian manufacturers of iron and steel goods, the Canadian consumption continues to increase at an even more rapid rate than the domestic production. At the present time less than 30 per cent of the quantity of iron and steel consumed in Canada is supplied from Canadian plants; the Canadian producers are, therefore, compelled to meet conditions in so far as market and prices are concerned which result from the condition of the industry in those countries from which our chief supplies are obtained, viz., the United States and Great Britain. Throughout the greater part of 1911 and a portion of 1912, low prices were quoted on iron and steel imported from the United States, and Canadian producers claimed that it was impossible to carry on business except at a very low margin of profit. Price conditions, however, have improved considerably during 1912. Despite the adverse conditions of trade the production of pig iron and steel has continued to increase, and manufacturers are almost without exception continuing to extend their facilities to supply a larger market in the future.

The production of iron ore from Canadian mines must be considered apart from the blast furnaces and steel industries. Canadian iron ore resources have not been developed sufficiently to supply home demands—in fact since 1896 Canadian blast furnaces and steel plants have become more and more dependent upon supplies of imported ores. The total shipments of iron ores in 1912 from mines in Canada were 215,883 tons, whereas blast furnaces consumed 2,090,753 tons, and steel furnaces 43,006 tons. Although the shipments from iron ore mines were slightly higher than in 1911, they are, with the exception of the previous year, the lowest that have been recorded in thirteen years, and amount to less than 10 per cent of the years' requirements of blast and steel furnaces. Considerable progress, however, is being made in the development of large low grade iron ore bodies, and if the successful concentration of these is achieved, a growing production may be anticipated in the immediate future. The production of pig iron in 1912 was 1,014,587 short tons, and steel ingots and castings, 957,681 short tons. While the rate of production of iron ore has shown practically no increase during the past thirteen years, the production of pig iron is now over ten times that of 1900.

A considerable portion of the production of iron ore is exported,and of the total amount of iron ore used in Canadian blast furnaces in 1912, only about 3 per cent is of domestic origin. Of the total amount of coke used 52 per cent was either imported or made from imported coal, and 27 per cent of the limestone flux used was from sources outside of Canada. In each instance the proportion of imported raw material used was either equal to or higher than the proportion used in 1911. During 1912 the total tonnage of imported ores used in Canadian furnaces was 2,019,165 tons, being derived chiefly from Newfoundland and from the south shore of Lake Superior.

The assistance granted by the Federal Government to the iron and steel industries in the form of bounties ceased in the year 1910, with the exception of the bounty on steel rods which was continued until June 30, 1911, and the bounty on pig iron and steel made in electric furnaces which was available to December 31, 1912. No bounties on iron and steel were claimed during the calendar year 1912.

The accompanying table gives a summary of the chief statistics of iron ores, pig iron, and steel, while more detailed records will be found in subsequent tables.

## Summary of Iron and Steel Statistics, 1909–12.

| — | 1909. | 1910. | 1911. | 1912. |
|---|---|---|---|---|
| | Tons. | Tons. | Tons. | Tons. |
| Iron ore shipped | 268,043 | 259,418 | 210,344 | 215,883 |
| Canadian iron ore charged to blast furnaces | 231,994 | 149,505 | 67,434 | 71,588 |
| Imported iron ore charged to blast furnaces | 1,235,000 | 1,377,035 | 1,628,368 | 2,019,165 |
| Iron ore charged to steel furnaces | (a) | 39,332 | 42,892 | 43,006 |
| Pig iron made | 757,162 | 800,797 | 917,535 | 1,014,587 |
| Pig iron exported | 5,063 | 9,763 | 5,870 | 6,976 |
| Pig iron imported | 148,338 | 243,859 | 208,487 | 272,565 |
| Pig iron consumption (calculated) | 900,437 | 1,034,893 | 1,120,152 | 1,280,176 |
| Pig iron used in steel furnaces | (a) | 690,913 | 700,679 | 706,895 |
| Steel ingots and castings made | 754,719 | 822,284 | 882,396 | 957,681 |
| Steel rails made | 377,642 | 399,762 | 399,760 | 471,422 |
| Canadian coke used in iron blast furnaces | 412,016 | 491,281 | 543,933 | 609,183 |
| Imported coke used in iron blast furnaces | 507,255 | 476,838 | 577,388 | 656,815 |
| Iron and steel imported (b) | 565,734 | 915,425 | 1,172,388 | 1,323,348 |
| Number of completed blast furnaces No. | 16 | 17 | 18 | 19 |
| Number of men employed in blast furnaces " | 1,486 | 1,403 | 1,778 | 1,358 |
| Wages paid in blast furnaces $ | 879,429 | 1,006,727 | 1,097,354 | 993,941 |
| Value of pig iron produced | 9,581,864 | 11,245,622 | 12,307,225 | 14,550,999 |
| Value of iron and steel goods exported. (c) $ | 7,172,413 | 7,895,489 | 9,907,281 | 10,682,484 |
| Value of iron and steel goods imported. (d) $ | 40,393,431 | 59,952,197 | 85,319,541 | 102,568,832 |

(a) Not collected.

(b) Figures cover the fiscal year ending March 31 and include all iron and steel goods for which weights are given. For details see Table 20.

(c) Figures cover the calendar year. For details see Table 19.

(d) Figures cover the fiscal year ending March 31. For details see Tables 21 and 22.

## IRON ORE.

The total shipments of iron ore in Canada in 1912 were 215,883 tons, valued at $523,315 at the shipping point, as compared with 210,344 tons, valued at $522,319, in 1911, and 259,418 tons valued at $574,362, in 1910. Of the 1912 production, 86,971 tons were classed as hematite and 128,912 tons as magnetite. The production in 1911 included 137,399 tons of hematite and 72,945 tons of magnetite. Although there were but little active mining operations in the Maritime Provinces during 1912, considerable shipments of iron ore were made from stock in hand.

The Torbrook mines in Annapolis county, N.S., owned by the Canada Iron Corporation, were not operated during the year, but shipments of 30,857 net tons were made from stock piles. Preparations were being made to re-open the mine. Some prospecting is reported to have been carried on near Glencoe, Inverness county, on a promising body of iron ore.

In New Brunswick, the Canada Iron Corporation operated its mines near Austin Brook, Bathurst, the work being chiefly of the nature of development. Shipments, however, were made from stock of 71,520 tons as against 31,120 tons shipped in 1911.

The total shipments from both these provinces in 1912 were made either to Europe or to the United States

In the Province of Quebec some titaniferous ore was mined at St. Urbain, but was held for shipment in 1913. The Manitou Mining Co. opened up a mine on lots 37 and 38, range V, of the township of Beresford, Terrebonne county, and 1,185 tons of titaniferous ore were shipped from Ivry station to the United States.

The total shipments from Ontario mines in 1912 were 112,321 tons, as compared with 175,586 tons in 1911. The largest producers were the Helen mine at Michipicoten, and the Moose Mountain mine at Sellwood, north of Sudbury. Several other iron ore properties were being developed. The Canada Iron Mines, Ltd., has opened up the Bessemer mine and Childs mine in Hastings county, and has built a concentrating plant in Trenton, Ontario. A considerable tonnage of ore was shipped to the concentrator during the year, but a trial shipment only of concentrates was made. The Tivani Electric Steel Co., Ltd., Belleville, was engaged in developing the Orton mine, the ore from which it proposes to use in its new electric steel furnace. The Belmont iron mine was being developed by the Buffalo Union Furnace Co. The ore will be used in the new furnace being constructed by this Company at Port Colborne, Ontario. The mines at Atikokan were not worked for output as the furnaces at Port Arthur were closed down throughout the year, but operations were carried on chiefly for development. The Helen mine at Michipicoten was operated throughout the year and a considerable tonnage of ore stocked in addition to the shipments made to the furnaces at Sault Ste. Marie. Shipments were made from

Moose Mountain mine to various furnaces in Ontario and the United States, and a beginning has been made in the concentration of these ores.

No production is reported from the Province of British Columbia.

The production by provinces during the past three years was as follows:—

IRON.—TABLE 1.

### Production of Iron Ore by Provinces, 1910–11–12.

| Provinces. | 1910. | | 1911. | | 1912. | |
|---|---|---|---|---|---|---|
| | Tons. | Value. | Tons. | Value. | Tons. | Value. |
| | | $ | | $ | | $ |
| New Brunswick..... | 5,336 | 11,910 | 31,120 | 69,464 | 71,520 | 127,716 |
| Nova Scotia........ | 18,134 | 40,478 | 22 | 50 | 30,857 | 168,877 |
| Quebec............. | 4,503 | 8,252 | 3,616 | 6,479 | 1,185 | 4,232 |
| Ontario............ | 231,445 | 513,722 | 175,586 | 446,326 | 112,321 | 222,490 |
| | 259,418 | 574,362 | 210,344 | 522,319 | 215,883 | 523,315 |

The production during 1911 and 1912 classed as magnetite (including titaniferous iron ores and some ores with an admixture of hematite), and hematite, was as follows:—

IRON.—TABLE 2.

### Classified Production of Iron Ore, 1911–12.

| Character of ore. | 1911. | | | 1912. | | |
|---|---|---|---|---|---|---|
| | Short tons. | Value. | Per ton. | Short tons. | Value. | Per ton. |
| | | $ | $ cts. | | $ | $ cts. |
| Magnetite........... | 72,945 | 154,295 | 2 12 | 128,912 | 216,368 | 1 68 |
| Hematite........... | 137,399 | 368,024 | 2 68 | 86,971 | 306,947 | 3 53 |
| | 210,344 | 522,319 | 2 48 | 215,883 | 523,315 | 2 42 |

A record of the production by provinces in past years is shown in Tables 3 and 4. There was a considerable production in Ontario previous to 1886, which is not included.

IRON.—TABLE 3.

## Production of Iron Ore, by Provinces, 1866-1912.

| Calendar Year. | New Brunswick. | Nova Scotia. | Quebec. | Ontario. | British Columbia. | Total. |
|---|---|---|---|---|---|---|
| | Tons. | Tons. | Tons. | Tons. | Tons. | Tons. |
| 1886 | | 44,388 | | 16,032 | 3,941 | 64,361 |
| 1887 | | 43,532 | 13,404 | 16,598 | 2,796 | 76,330 |
| 1888 | | 42,611 | 10,710 | 16,894 | 8,372 | 78,587 |
| 1889 | | 54,161 | 14,533 | | 15,487 | 84,181 |
| 1890 | | 49,206 | 22,305 | | | 76,511 |
| 1891 | | 53,649 | 14,380 | | 950 | 68,979 |
| 1892 | | 78,258 | 22,690 | | 2,300 | 103,248 |
| 1893 | | 102,201 | 22,076 | | 1,325 | 125,602 |
| 1894 | | 89,379 | 19,492 | | 1,120 | 109,991 |
| 1895 | | 83,792 | 17,783 | | 1,222 | 102,797 |
| 1896 | | 58,810 | 17,630 | 15,270 | 196 | 91,906 |
| 1897 | | 23,400 | 22,436 | 2,770 | 2,099 | 50,705 |
| 1898 | | 19,079 | 17,873 | 21,111 | 280 | 58,343 |
| 1899 | | 28,000 | 19,420 | 25 126 | 2,071 | 74,617 |
| 1900 | | 18,940 | 19,000 | 82,950 | 1,110 | 122,000 |
| 1901 | | 18,619 | 15,489 | 272,538 | 7,000 | 313,646 |
| 1902 | | 16,172 | 18,524 | 359,288 | 10,019 | 404,003 |
| 1903 | | 40,335 | 12,035 | 209,634 | 2,290 | 264,294 |
| 1904 | | 61,293 | 16,152 | 141,601 | | 219,046 |
| 1905 | | 84,952 | 12,681 | 193,464 | | 291,097 |
| 1906 | | 97,820 | 9,933 | 141,078 | | 248,831 |
| 1907 | | 89,839 | 12,748 | 207.769 | 2,500 | 312,856 |
| 1908 | | 11,802 | 10,103 | 216.177 | | 238.082 |
| 1909 | | | 4,150 | 263,393 | | 268,043 |
| 1910 | 5,336 | 18,134 | 4,503 | 231,445 | | 259,418 |
| 1911 | 31,120 | 22 | 3,616 | 175,586 | | 210,344 |
| 1912 | 71,520 | 30.857 | 1,185 | 112,321 | | 215,883 |

IRON.—TABLE 4.

## Production of Iron Ore in Nova Scotia, 1876-1885.

| Calendar Year. | Tons. | Calendar Year. | Tons. |
|---|---|---|---|
| 1876 | 15,274 | 1881 | 39,843 |
| 1877 | 16,879 | 1882 | 42,135 |
| 1878 | 36,600 | 1883 | 52,410 |
| 1879 | 29,889 | 1884 | 54,885 |
| 1880 | 51,193 | 1885 | 48,129 |

Following is a list of the principal producers of iron ore in Canada:—

Canada Iron Corporation, Limited, Mark Fisher Bldg., Montreal, Que.
*E. H. Duval, Lévis, Que., (Guay P.O.).
*H. C. Bosse, 92 St. Peter St., Quebec, Que.
*Joseph Bouchard, Baie St. Paul, Que.
Manitou Iron Mining Co., Montreal, Que.
*Loughborough Mining Co., Schenectady, N.Y.
*The Canadian Iron Ore Co., 1231 St. Valier St., Quebec, Que.
The Algoma Steel Corporation, Sault Ste. Marie, Ont.
Canada Iron Mines, Ltd., Toronto, Ont.
*Atikokan Iron Foundry Company, Port Arthur, Ont.
Moose Mountain, Limited, Sellwood, Ont.
*Dominion Bessemer Ore Co., Ltd., 472 Bullitt Bldg., Philadelphia, Pa.
*Tivani Electric Steel Co., Belleville, Ont.
*Buffalo Union Furnace Co., Buffalo, N.Y.

*No shipment reported during 1912.

## EXPORTS AND IMPORTS OF IRON ORE.

Previous to April 1, 1912, a separate record of the imports of iron ore into Canada was not published by the Department of Customs. During the nine months ending December 31, 1912, the imports of iron ore were recorded by that department as 2,047,509 tons, valued at $3,932,074. Since practically all of the imported ores are used in Canadian blast furnaces, the statistics of consumption of imported ores in these furnaces would furnish a fairly close estimate of the quantities imported.

There were used in Canadian iron furnaces during 1912, 2,019,165 tons of imported iron ores, as compared with 1,628,368 tons in 1911. Increasing amounts of iron ores have been imported since 1896, the total quantity imported during the 17 years being 12,545,654 tons.

According to the United States reports of Commerce and Navigation, there were exported to Canada during the twelve months ending June 30, 1912, 931,647 tons (2000 lb.) of iron ore valued at $2,806,238, and during the previous year 826,071 tons (2000 lb.) valued at $2,496,246.

The shipments of iron ore from Newfoundland to Sydney, during the calendar year 1912, were 956,459 tons, as compared with 737,261 tons in 1911, and 808,762 tons in 1910.

The exports of iron ore from Canada during 1912 were 118,129 tons valued at $382,005, as compared with exports of 37,686 tons valued at $133,411 in 1911.

The ores exported in 1912 were chiefly those from Torbrook, N.S., Bathurst, N.B., Moose Mountain, Ont., and a small tonnage of titaniferous iron ores from Quebec.

IRON.—TABLE 5.

## Exports of Iron Ore, Calendar Years 1893-1912.

| Calendar Year. | Tons. | Value. | Average value. | Calendar Year. | Tons. | Value. | Average value. |
|---|---|---|---|---|---|---|---|
| | | $ | $ | | | $ | $ |
| 1893 | 2,419 | 7,590 | 3 14 | 1903* | 368,233 | 922,571 | 2 51 |
| 1894 | ...... | 21,294 | ...... | 1904* | 168,828 | 401,738 | 2 38 |
| 1895 | 1,571 | 3,909 | 2 49 | 1905* | 168,289 | 407,881 | 2 42 |
| 1896 | 1,033 | 1,911 | 1 85 | 1906 | 74,778 | 129,177 | 2 01 |
| 1897 | 403 | 811 | 2 01 | 1907 | 25,901 | 45,907 | 1 77 |
| 1898 | 182 | 278 | 1 54 | 1908 | (a) | ...... | .. |
| 1899 | 4,145 | 9,538 | 2 30 | 1909 | 21,956 | 61,954 | 2 82 |
| 1900 | 5,527 | 13,511 | 2 44 | 1910 | 114,499 | 324,186 | 2 83 |
| 1901* | 306,199 | 762,283 | 2 49 | 1911 | 37,686 | 133,411 | 3 54 |
| 1902* | 428,901 | 1,065,019 | 2 48 | 1912 | 118,129 | 382,005 | 3 23 |

*The export figures for the five years indicated are incorrect owing to a duplication of entries.

(a) The figures of the Trade Report for this year include ferro-products, and are, therefore, omitted.

IRON.—TABLE 6.

## Exports of Iron Ore, Fiscal Years, 1879-1912.

| Fiscal Year. | Tons. | Value. | Average value. | Fiscal Year. | Tons. | Value. | Average. value. |
|---|---|---|---|---|---|---|---|
| | | $ | $ | | | $ | $ |
| 1879 | 3,562 | 7,530 | 2 11 | 1896 | 14 | 35 | 2 50 |
| 1880 | 30,524 | 76,474 | 2 51 | 1897 | 1,320 | 2,492 | 1 89 |
| 1881 | 44,677 | 114,850 | 2 57 | 1898 | 360 | 402 | 1 16 |
| 1882 | 43,835 | 135,463 | 3 09 | 1899 | 1,849 | 4,968 | 2 69 |
| 1883 | 44,914 | 138,775 | 3 09 | 1900 | 4,327 | 7,689 | 1 78 |
| 1884 | 25,308 | 66,549 | 2 63 | 1901* | 58,401 | 150,657 | 2 58 |
| 1885 | 54,367 | 132,074 | 2 43 | 1902* | 525,983 | 1,303,901 | 2 48 |
| 1886 | 7,542 | 23,039 | 3 05 | 1903* | 293,510 | 733,230 | 2 50 |
| 1887 | 23,345 | 71,934 | 3 08 | 1904* | 233,850 | 579,883 | 2 48 |
| 1888 | 13,544 | 39,945 | 2 95 | 1905* | 224,908 | 540,909 | 2 41 |
| 1889 | 24,752 | 60,289 | 2 44 | 1906* | 148,040 | 345,540 | 2 33 |
| 1890 | 13,811 | 31,376 | 2 27 | 1907† | 34,191 | 65,367 | 1 91 |
| 1891 | 14,648 | 32,582 | 2 22 | 1908 | 26,310 | 46,686 | 1 77 |
| 1892 | 7,707 | 36,935 | 4 79 | 1909 | 3,933 | 71,663 | 1 82 |
| 1893 | 7,811 | 26,114 | 3 34 | 1910 | 31,535 | 80,540 | 2 55 |
| 1894 | 1,859 | 9,026 | 4 86 | 1911 | 104,807 | 304,718 | 2 91 |
| 1895 | 2,315 | 5,743 | 2 48 | 1912 | 37,657 | 133,561 | 3 54 |

*See foot-note to Table 5. †Nine months ending Marc 1907.

IRON.—TABLE 7.

### Imports of Iron Ore into the United States from Canada, 1893-1912.

| Year ending June 30. | Short tons. | Value. | Average value. | Year ending June 30. | Short tons. | Value. | Average value. |
|---|---|---|---|---|---|---|---|
| | | $ | $ | | | $ | $ |
| 1893 | 7,706 | 17,186 | 2 23 | 1903 | 144,725 | 320,263 | 2 21 |
| 1894 | 301 | 756 | 2 51 | 1904 | 126,995 | 283,765 | 2 23 |
| 1895 | 2,681 | 10,114 | 3 77 | 1905 | 120,241 | 245,623 | 2 04 |
| 1896 | 39 | 142 | 3 64 | 1906 | 113,809 | 220,112 | 1 93 |
| 1897 | 2,535 | 5,243 | 2 07 | 1907 | 34,731 | 52,765 | 1 52 |
| 1898 | 1,313 | 2,904 | 2 21 | 1908 | 32,124 | 55,617 | 1 73 |
| 1899 | 2,585 | 5,120 | 1 98 | 1909 | 3,490 | 12,660 | 3 63 |
| 1900 | 4,477 | 5,550 | 1 24 | 1910 | 36,070 | 97,984 | 2 72 |
| 1901 | 34,453 | 76,159 | 2 21 | 1911 | 117,393 | 264,452 | 2 25 |
| 1902 | 309,527 | 685,340 | 2 21 | 1912 | 45,089 | 89,336 | 1 98 |

*Compiled from the 'Foreign Commerce and Navigation of the United States.'

## PIG IRON AND STEEL.

An increase of 10·5 per cent is shown in the production of pig iron in Canada in 1912 over the production of 1911, as compared with an increase of 14·6 per cent for 1911 over that of 1910.

At the close of the year Canada had nineteen completed furnaces, and two under construction, grouped in ten separate completed plants, operated by eight companies or corporations, and one new plant under construction.

The total production of pig iron in 1912 was 1,014,587 short tons (905,881 long tons), valued at approximately $14,550,999, as compared with 917,535 short tons (819,228 long tons), valued at $12,307,125, in 1911, and 800,797 short tons (714,998 long tons) valued at $11,245,622, in 1910. The Londonderry furnace has not been in operation during four years past, and the furnaces of the Canada Iron Corporation, in Quebec, and that of the Atikokan Iron Company at Port Arthur, were idle throughout 1912. The figures of production given above do not include the output of ferro-products from electric furnaces which are situated at Welland and Sault Ste. Marie, Ontario, and Buckingham, Quebec. Ferro-silicon was made both at Welland and Sault Ste. Marie, ferro-titanium at Welland, and ferro-phosphorus at Buckingham.

Of the total output of pig iron in 1912, 21,701 tons, valued at $435,960, or $20.10 per short ton, were made with charcoal as fuel, and 992,886 tons, valued at $14,110,030, or $14.21 per ton, with coke. The amount of charcoal iron made in 1911 was 20,759 tons, and in 1910, 17,164 tons; while the quantity made with coke in 1911 was 896,776 tons, and in 1910, 783,633 tons.

The classification of the coke iron production in 1912, according to the purpose for which it was intended, was as follows: Bessemer, 256,191 tons; basic, 541,534 tons; foundry (including miscellaneous) 192,161 tons.

The classification of the production in 1911: Bessemer, 208,626 tons; basic, 464,221 tons; foundry, 192,161 tons.

The total production of pig iron in 1911 and 1912 is shown by provinces in the following table, the average value per ton being also indicated. In the case of Nova Scotia a large proportion of the pig iron is directly converted into steel and as a very small portion of the metal is sold as pig iron, it is somewhat difficult to place a satisfactory valuation upon the output. In 1910 and 1911 a nominal value of $12 per short ton was used for statistical purposes. This, in 1912, was increased to $15 per ton, which was thought possibly to be a fairer valuation on the output. It must not be inferred, therefore, that the difference represents an increase in the value of pig iron at Sydney.

There was no production of pig iron in the Province of Quebec during 1912. In past years this Province has had a continuous though small production of charcoal iron, which for many years commanded a high price.

IRON.—TABLE 8.

### Production of Pig Iron by Provinces, 1911-12.

| Provinces. | 1911. | | | 1912. | | | Percentage increase or decrease in quantity. |
|---|---|---|---|---|---|---|---|
| | Tons. | Value. | Value per ton. | Tons. | Value. | Value per ton. | |
| | | $ | $ cts | | $ | $ cts | % |
| Nova Scotia... | 390,242 | 4,682,904 | 12 00 | 424,994 | 6,374,910 | 15 00 | +8·9 |
| Quebec......... | 658 | 17,282 | 26 24 | nil. | ............ | .......... | −100·0 |
| Ontario......... | 526,635 | 7,606,939 | 14 44 | 589,593 | 8,176,089 | 13 87 | +11·9 |
| Total......... | 917,535 | 12,307,125 | 13 41 | 1,014,587 | 14,550.999 | 14 34 | +10·6 |

A record of the production by provinces since 1887 is shown in Table 9.

It will be observed that while the production of Nova Scotia has increased by about 30 per cent since 1906, the Ontario production has increased by over 60 per cent during that period. The proportions of the whole contributed by the several provinces were, in 1912: Nova Scotia, 41·9 per cent; and Ontario, 5·81 per cent. In 1911 the proportions were: Nova Scotia, 42·5 per cent; Ontario, 57·4 per cent; and Quebec less than one-tenth of one per cent.

### IRON.—TABLE 9.

## Annual Production of Pig Iron by Provinces, 1887-1912.

| Year. | Nova Scotia. |  | Ontario. |  | Quebec. |  | Total. |  |
|---|---|---|---|---|---|---|---|---|
|  | Tons. | Value | Tons. | Value. | Tons. | Value. | Tons. | Value. |
|  |  | $ |  | $ |  | $ |  | $ |
| 1887 | 19,320 | 250,000 | .......... | .......... | 5,507 | 116,192 | 24,927 | 366,192 |
| 1888 | 17,556 | 211,403 | .......... | .......... | 4,243 | 101,832 | 21,790 | 313,235 |
| 1889 | 21,280 | 383,202 | .......... | .......... | 4,632 | 116,670 | 25,921 | 499,872 |
| 1890 | 18,382 | 262,608 | .......... | .......... | 3,390 | 69,080 | 21,772 | 331,688 |
| 1891 | 21,353 | 309,527 | .......... | .......... | 2,538 | 59,374 | 23,891 | 337,901 |
| 1892 | 40,049 | 583,556 |  |  | 2,394 | 53,865 | 42,443 | 673,421 |
| 1893 | 46,472 | 553,408 |  |  | 9,475 | 236,875 | 55,947 | 790,283 |
| 1894 | 41,344 | 449,533 |  |  | 8,623 | 196,914 | 49,967 | 646,447 |
| 1895 | 35,192 | 417,083 |  |  | 7,262 | 169,653 | 42,454 | 586,736 |
| 1896 | 32,351 | 400,829 | 28,302 | 368,942 | 6,615 | 154,358 | 67,268 | 924,129 |
| 1897 | 22,500 | 230,000 | 26,115 | 291,466 | 9,392 | 217,235 | 58,007 | 738,701 |
| 1898 | 21,627 | 221,677 | 48,253 | 530,789 | 7,135 | 159,929 | 77,015 | 912,395 |
| 1899 | 31,100 | 404,300 | 64,749 | 808,157 | 7,094 | 164,849 | 102,943 | 1,377,306 |
| 1900 | 28,133 | 421,995 | 62,387 | 938,725 | 6,055 | 140,978 | 96,575 | 1,501,698 |
| 1901 | 151,130 | 1,764,017 | 116,371 | 1,599,413 | 6,875 | 149,493 | 274,376 | 3,512,923 |
| 1902 | 237,244 | 2,477,767 | 112,688 | 1,584,273 | 7,970 | 181,501 | 357,902 | 4,243,541 |
| 1903 | 201,246 | 2,186,273 | 87,004 | 1,345,464 | 9,635 | 210,973 | 297,885 | 3,742,710 |
| 1904 | 164,488 | 1,700,130 | 127,845 | 1,746,126 | 11,121 | 241,729 | 303,454 | 3,687,985 |
| 1905 | 261,014 | 2,440,722 | 256,704 | 3,868,197 | 7,588 | 166,267 | 525,306 | 6,475,186 |
| 1906 | 315,068 | 3,439,217 | 275,558 | 4,338,275 | 7,845 | 177,644 | 598,411 | 7,955,136 |
| 1907 | 366,456 | 4,211,913 | 275,459 | 4,581,309 | 10,047 | 232,004 | 651,962 | 9,125,226 |
| 1908 | 352,642 | 3,554,540 | 271,484 | 4,385,271 | 6,709 | 171,383 | 630,835 | 8,111,194 |
| 1909 | 345,380 | 3,453,860 | 407,012 | 6,002,441 | 4,770 | 125,623 | 757,162 | 9,581,864 |
| 1910 | 350,287 | 4,203,444 | 447,273 | 6,956,923 | 3,237 | 85,255 | 800,797 | 11,245,622 |
| 1911 | 390,242 | 4,682,904 | 526,635 | 7,608,939 | 658 | 17,282 | 917,535 | 12,307,125 |
| 1912 | 424,904 | 6,374,910 | 589,593 | 8,176,039 | .......... | .......... | 1,014,587 | 14,550,999 |

*Prices*—The average price of domestic pig iron at Toronto, according to trade quotations, ranged from $19 to $19.50 per gross ton during eleven months of the year. In December quotations were advanced to $22. Another authority furnishes quotations at from $18 to $18.50 in January, increasing in May to from $19.75 to $20; increasing again in September to from $20.50 to $21, in October, $21.50 to $22, and December, $22 to $23. In Montreal, the price of Nova Scotia iron was quoted in January at $19.75, falling to $18.50 in April, and increasing again in August and September to $19 and $20, and in December, $21.50.

The price of Summerlee No. 2 pig iron was quoted in Montreal at $20 during the first nine months of the year, and at $24 during the last three months.

Bessemer pig iron at Pittsburgh was quoted at from $15 to $15.20 during the first eight months of the year, advancing steadily during the next four months to an average of $18.15 per gross ton, in December. The price of the same grade of iron in Pittsburgh in 1911 varied between $15 and $16 per ton.

A record of the average monthly prices per gross ton of pig iron at Montreal and Toronto during 1911 and 1912, and of Bessemer pig iron and of grey forge iron at Pittsburgh, for a period of ten years, is shown in the accompanying tables.

## Average Monthly Prices of Pig Iron in Canada During 1911 12.

| | (1) Foundry No. 1, N.S. at Montreal. | | (2) Summerlee No. 2 at Montreal. | | (3) Midland at Toronto. | | |
|---|---|---|---|---|---|---|---|
| | 1911. | 1912. | 1911. | 1912. | 1911. | | 1912. |
| | | | | | No. 1. | No. 2. | |
| January | 21·00 | 19·75 | 20·00 | 20·00 | 19·00 | 18·50 | 18·00-18·50 |
| February | 21·00 | 19·00 | 20·00 | 20·00 | 19·00 | 18·50 | 18·50 19·00 |
| March | 21·00 | 19·00 | 20·00 | 20·00 | 19·00 | 18·50 | 18·50 19·00 |
| April | 21·00 | 18·50 | 20·00 | 20·00 | 19·00 | 18·50 | 18·50 19·00 |
| May | 19·00 19·50 | 18·50 | 20·00 | 20·00 | 19·00 | 18·50 | 19·75-20·00 |
| June | 19·00 19·50 | 18·50 | 20·00 | 20·00 | 19·00 | 18·50 | 19·75 20·00 |
| July | 19·00 19·50 | 18·50 | 20·00 | 20·00 | 19·00 | 18·50 | 19·75 20·00 |
| August | 19·00-19·50 | 19·00 | 20·00 | 20·00 | 19·00 | 18·50 | 19·75 20·00 |
| September | 19·00 19·50 | 20·00 | 20·00 | 20·00 | 19·00 | 18·50 | 20·50 21·50 |
| October | 19·00-19·50 | 20·50 | 20·00 | 24·00 | 19·00 | 18·50 | 21·50-22·00 |
| November | 19·00 19·50 | 20·50 | 20·00 | 24·00 | 19·00 | 18·50 | 21·50 22·50 |
| December | 19·00-19·50 | 21·50 | 20·00 | 24·00 | 19·00 | 18·50 | 22·00 23·00 |
| Average. | 19·917 | 19·437 | 20·000 | 21·000 | 19·000 | 18·500 | 20·104 |

(1) Price per ton of 2,240 pounds, f.o.b. at Montreal, on the opening market day of each month: 1911, quotations from Drummond, McColl & Company; 1912, quotations supplied by the Dominion Iron and Steel Co., Ltd.

(2) Price per ton at Montreal, in the first week of each month, 1911 and 1912; quotations from Hardwell & Metal.

(3) Prices for 1911 from the *Canadian Engineer*. Price per ton, at Toronto, at the first of each month; quotations for 1912 from the *Canadian Mining Journal*.

## Bessemer Pig Iron at Pittsburgh, per Gross Ton (2,240 pounds)*

| | 1903. | 1904. | 1905. | 1906. | 1907. | 1908. | 1909. | 1910. | 1911. | 1912. |
|---|---|---|---|---|---|---|---|---|---|---|
| | $ cts. | $ cts. | $ cts. | $ cts. | $ cts. | $ cts. | $ cts. | $ cts. | $ cts. | $ cts. |
| January | 22 15 | 13 91 | 16 85 | 18 35 | 23 15 | 19 00 | 17 34 | 19 90 | 15 90 | 15 05 |
| February | 21 45 | 13 66 | 16 41 | 18 35 | 22 85 | 17 90 | 16 78 | 19 34 | 15 90 | 14 90 |
| March | 21 85 | 14 25 | 16 35 | 18 28 | 22 85 | 17 86 | 16 25 | 18 60 | 15 90 | 15 09 |
| April | 21 28 | 14 18 | 16 35 | 18 19 | 23 35 | 17 49 | 15 78 | 18 27 | 15 90 | 15 15 |
| May | 20 01 | 13 60 | 16 16 | 18 10 | 24 01 | 16 93 | 15 84 | 17 52 | 15 90 | 15 13 |
| June | 19 72 | 12 81 | 16 65 | 18 23 | 24 27 | 16 90 | 16 05 | 16 60 | 15 90 | 15 15 |
| July | 18 89 | 12 [illegible] | 14 85 | 18 41 | 23 55 | 16 83 | 16 46 | 16 40 | 15 90 | 15 20 |
| August | 18 35 | 12 81 | 15 20 | 19 00 | 22 90 | 16 23 | 17 93 | 16 09 | 15 90 | 15 46 |
| September | 17 22 | 12 63 | 15 91 | 19 54 | 22 90 | 15 90 | 18 05 | 15 90 | 15 90 | 16 15 |
| October | 16 05 | 13 10 | 16 54 | 20 35 | 22 00 | 15 71 | 19 53 | 15 90 | 15 44 | 17 80 |
| November | 15 18 | 14 85 | 17 85 | 22 85 | 20 65 | 16 59 | 19 90 | 15 82 | 15 00 | 18 02 |
| December | 14 40 | 16 65 | 18 35 | 23 75 | 19 34 | 17 40 | 19 90 | 15 90 | 15 03 | 18 15 |

*From the *Iron Age*.

## Grey Forge Pig Iron at Pittsburgh, per Gross Ton (2,240 pounds)

| | 1903. | 1904. | 1905. | 1906. | 1907. | 1908. | 1909. | 1910. | 1911. | 1912. |
|---|---|---|---|---|---|---|---|---|---|---|
| | $ cts. | $ cts. | $ cts. | $ cts. | $ cts. | $ cts. | $ cts. | $ cts. | $ cts. | $ cts. |
| January | 20 50 | 12 81 | 16 11 | 17 30 | 22 58 | 17 00 | 15 40 | 17 40 | 14 09 | 13 40 |
| February | 20 50 | 12 75 | 15 99 | 17 29 | 22 20 | 15 99 | 15 09 | 17 02 | 14 27 | 13 40 |
| March | 20 87 | 13 17 | 16 00 | 16 91 | 21 76 | 15 90 | 14 65 | 16 15 | 14 40 | 13 40 |
| April | 20 45 | 13 09 | 15 77 | 16 66 | 21 72 | 15 45 | 14 40 | 16 09 | 14 40 | 13 65 |
| May | 19 87 | 12 02 | 15 57 | 16 49 | 22 88 | 14 90 | 14 40 | 15 90 | 14 27 | 13 78 |
| June | 18 87 | 12 27 | 15 18 | 16 35 | 23 15 | 14 90 | 14 77 | 15 20 | 14 00 | 13 90 |
| July | 17 90 | 11 92 | 14 55 | 16 41 | 22 96 | [illegible] 9 | 14 85 | 14 52 | 13 90 | 13 90 |
| August | 16 04 | 11 89 | 14 36 | 17 75 | 21 90 | [illegible] 71 | 15 21 | 14 30 | 13 90 | 14 15 |
| September | 15 25 | 11 75 | 14 72 | 18 35 | 21 15 | 14 46 | 16 15 | 14 15 | 13 84 | 14 65 |
| October | 14 20 | 12 30 | 15 66 | 19 47 | 20 40 | 14 40 | 17 02 | 14 15 | 13 65 | 16 18 |
| November | 13 00 | 14 25 | 16 58 | 22 45 | 19 17 | 14 90 | 17 27 | 14 09 | 13 47 | 16 50 |
| December | 12 80 | 15 85 | 16 97 | 22 85 | 18 40 | 15 25 | 17 40 | 13 90 | 13 40 | 17 15 |

The quantities of iron ore, coke, charcoal, limestone, etc., consumed in blast furnaces in 1911 and 1912, are shown as follows:—

IRON.—TABLE 10.

## Ore, Fuel, and Flux Charged to Blast Furnaces, in Years 1911-12.

| | | 1911. | | | 1912. | | |
|---|---|---|---|---|---|---|---|
| | | Quantity. | Value. | Canadian and imported | Quantity. | Value. | Canadian and imported |
| | | | $ | % | | $ | % |
| Canadian iron ore | Tons. | 67,434 | 536,050 | 4 | 71,588 | 233,372 | 3·4 |
| Imported iron ore | " | 1,628,368 | 3,358,413 | 96 | 2,019,165 | 5,173,788 | 96·6 |
| Canadian coke | " | 543,933 | 1,767,782 | 48 | 609,183 | 2,284,438 | 48 |
| *Imported coke | " | 577,388 | 2,399,820 | 52 | 656,815 | 2,344,822 | 52 |
| Charcoal | Bus. | 1,960,459 | 178,274 | | 1,886,748 | 157,402 | |
| Canadian limestone | Tons. | 492,737 | 303,301 | 78 | 544,890 | 399,708 | 73 |
| Imported limestone | " | 132,479 | 130,221 | 22 | 160,723 | 132,656 | 23 |

Including coke made from imported coal.

Previous to 1896 pig iron was made entirely from Canadian ores. Since that date, however, increasing quantities of imported ore have been used, as well as imported fuels and fluxes, and in 1912 about 97 per cent of the ore charged, 52 per cent of the coke, and 27 per cent of the limestone, were imported. This condition is attributed largely to questions of cost and transportation affecting the ore supplies available for each furnace. The Newfoundland ores can be cheaply and conveniently laid down at Sydney, N.S.—in fact the iron and steel industry here has been built up on the basis of these ores, and by the local coal supply. In Ontario also, large quantities of imported ores are used. In 1912 the imported ore used in Ontario amounted to 1,142,593 tons, and the Canadian ores, 71,588 tons, the imported ores being derived from Michigan and Minnesota deposits. With the exception of a small quantity of charcoal used at one furnace, the fuel (coke) used in Ontario was also altogether imported, as well as a portion of the limestone flux.

IRON.—TABLE II.

### Iron Ore, Fuel, and Flux Charged to Blast Furnaces.

| Calendar Year. | Iron ore charged. |  | Fuel charged. |  |  |  |
|---|---|---|---|---|---|---|
|  | Canadian. | Imported | Charcoal. | [illegible] | Imported coke. | Limestone. |
|  | Tons. | Tons. | Bushels. |  | Tons. | Tons. |
| 1887 | 60,434 |  | 940,400 | [illegible] |  | 17,171 |
| 1888 | 54,256 |  | 804,280 | [illegible] |  | 16,857 |
| 1889 | 65,670 |  | 755,800 | [illegible] |  | [illegible] |
| 1890 | 57,304 |  | 589,890 | [illegible] |  | [illegible] |
| 1891 | 60,933 |  | 441,812 | [illegible] |  | [illegible] |
| 1892 | 96,948 |  | [illegible] | [illegible] |  | [illegible] |
| 1893 | 124,053 |  | 1,302,720 | [illegible] |  |  |
| 1894 | 108,871 |  | 1,173,970 | 40,026 |  |  |
| 1895 | 93,208 |  | 789,561 | 51,629 |  | [illegible] |
| 1896 | 96,560 | 46,300 | 756,000 | 50,067 | [illegible] | [illegible] |
| 1897 | 53,658 | 55,722 | [illegible] | [illegible] |  | [illegible] |
| 1898 | 57,881 | 77,107 | [illegible] | [illegible] | [illegible] | [illegible] |
| 1899 | 66,384 | 120,650 | [illegible] | [illegible] | [illegible] | 51,820 |
| 1900 | 71,341 | 112,042 | [illegible] | 45,021 | [illegible] | 52,966 |
| 1901 | 156,613 | 361,010 | [illegible] | [illegible] | [illegible] | [illegible] |
| 1902 | 125,664 | 559,381 | [illegible] | [illegible] | [illegible] | 293,594 |
| 1903 | 82,035 | 485,911 | [illegible] | [illegible] | [illegible] | 277,452 |
| 1904 | 180,932 | 454,671 | [illegible] | [illegible] | [illegible] | 211,278 |
| 1905 | 116,974 | 861,847 | [illegible] | [illegible] | [illegible] | 369,715 |
| 1906 | 221,733 | 982,740 | [illegible] | [illegible] | [illegible] | [illegible] |
| 1907 | 244,104 | 1,117,260 | [illegible] | [illegible] | [illegible] | [illegible] |
| 1908 | 209,266 | 1,051,445 | [illegible] | [illegible] | [illegible] | 483,065 |
| 1909 | 231,994 | [illegible] | [illegible] | [illegible] | [illegible] | 526,076 |
| 1910 | 149,505 | 1,377,035 | [illegible] | [illegible] | [illegible] | 569,355 |
| 1911 | 67,434 | 1,628,368 | 1,960,459 | [illegible] | [illegible] | 625,213 |
| 1912 | 71,588 | 2,019,165 | 1,886,748 | [illegible] | [illegible] | 705,613 |

*Includes for the first ten years small quantity of coal.

## IRON BLAST FURNACES IN CANADA IN 1912.

Of nineteen completed furnaces, fourteen were in blast in 1912 for varying periods of time. The operating companies with numbers and capacities of furnaces, were as follows:—

Dominion Iron and Steel Company, Sydney, C.B.—Five completed furnaces of 280 tons capacity, each, per day; four operated throughout 1912, one for 108 days; one furnace under construction.

Nova Scotia Steel & Coal Co., Ltd., New Glasgow, N.S.—One furnace at Sydney Mines, C.B., of 200 tons capacity; operated 322 days.

Londonderry Iron & Mining Co., Ltd., Londonderry, N.S.—One furnace of 100 tons capacity; idle throughout the year.

Canada Iron Corporation, Ltd., Montreal, Que.—Two small furnaces of seven and eight tons capacity, at Drummondville, Que., idle throughout the year; one furnace of 25 tons daily capacity, at Radnor Forges, Que., idle throughout the year; two furnaces of 125 tons and 250 tons at Midland, Ont., operated for 92 and 184 days respectively.

Standard Iron Company of Canada, Ltd., Deseronto, Ont.- One furnace with a daily capacity of 65 tons, operated for 11 months during the year 1912.

The Steel Company of Canada, Ltd., Hamilton, Ont. Two furnaces: one of 200 tons capacity operated for 314 days in 1912; a second furnace of 300 tons capacity, operated 325 days in 1912.

Algoma Steel Company, Ltd., Sault Ste. Marie, Ont.- Three furnaces at Steelton, near Sault Ste. Marie: two of 250 tons capacity each, operated for 322 and 300 days respectively; and one of 450 tons capacity, operated throughout the year.

The Atikokan Iron Company, Ltd., Port Arthur, Ont --One furnace of 100 tons capacity; idle throughout 1912.

The total daily capacity of the nineteen furnaces is about 3730 tons. On Decemoer 31, 1912, fourteen were in blast and nine idle.

The average number of men employed in blast furnace operations in 1912 were reported as 1,358, and the total wages paid, $993,941.

In addition to the new furnace being constructed by the Dominion Iron and Steel Company at Sydney, the Buffalo Union Furnace Company has begun the construction of a modern blast furnace at Port Colborne, Ont., for the manufacture of foundry, malleable, and Bessemer pig iron. This furnace will have a capacity of 300 to 315 tons per day, and will use Lake Superior ores at the outset, although it is proposed, at a later date, t also use Canadian concentrates.

The United States Steel Corporation also proposes to establish a plant in Canada, and a site has been selected at Ojibway, Ont., opposite the city of Detroit, Michigan. This Company's plans are outlined in the last published annual report of the corporation as follows:—

'In order to meet in a more satisfactory manner the growing demands of the Canadian trade for the products of the subsidiary companies, it has been decided to establish a manufacturing plant in Canada at the site which the corporation secured some years ago at Ojibway, Ontario, opposite the city of Detroit, Michigan. The site consists of about 1,500 acres, with a frontage of about a mile and a half on the Detroit river. The plans for, and the scope of, the construction of the plant have not yet been fully developed, but will probably include blast furnaces, open hearth steel works, rail mill, wire mill, structural and bar mills, and perhaps some other mills. It is expected the cost of the plant will in part be financed by an issue of bonds.'

## EXPORTS AND IMPORTS OF PIG IRON.

The exports of pig iron from Canada consist chiefly of high grade charcoal pig iron and of ferro products, including ferro-silicon and ferro-phosphorus.

The total exports during 1912 were 6,976 tons, valued at $310,702, or an average value per ton of $44.54, as compared with exports of 5,870 tons, valued at $271,968, or an average of $40.33 per ton, in 1911.

The exports during the past four years have not exceeded 10,000 tons in any one year, and during the previous four years, did not exceed 1,000 tons in one year.

Considerable quantities of pig iron are annually imported into Canada. During the calendar year 1912, the imports totalled 272,565 tons, valued at $3,511,599, and included 210,756 tons, valued at $2,599,117, or an average of $12.33 per ton from The United States; and 61,809 tons, valued at $912,482, or an average of $14.76 per ton, from Great Britain. The total imports in 1911 were 208,487 tons, valued at $2,610,989, or an average of $12.52 per ton; and in 1910, 243,859 tons, valued at $3,364,847. The 1912 imports included 115 tons of charcoal pig iron, valued at $1,370, or $11.91 per ton. There was no charcoal pig iron imported in 1911.

The annual imports of these two classes of pig iron since 1880 are shown in the accompanying Table No. 12, statistics being given for the fiscal year.

IRON.—TABLE 12.

## Annual Imports of Pig Iron Since 1880.

| Fiscal Year | Pig iron. | | | Charcoal pig iron. | | | Total. | |
|---|---|---|---|---|---|---|---|---|
| | Tons. | Value. | Average value. | Tons. | Value. | Average value. | Tons. | Value. |
| | | $ | $ cts. | | $ | $ cts. | | $ |
| 1880....... | (a) 23,159 | 371,956 | 16 06 | ......... | ......... | ......... | 23,159 | 371,956 |
| 1881..... .. | (a) 43,630 | 715,997 | 16 41 | ......... | ......... | ......... | 43,630 | 715,997 |
| 1882 .... | 56,594 | 811,221 | 14 33 | 6,837 | 211,791 | 30 98 | 63,431 | 1,023,012 |
| 1883 .. | 75,295 | 1,085,755 | 14 42 | 2,198 | 58,994 | 26 84 | 77,493 | 1,144,749 |
| 1884 .. | 49,291 | 653,768 | 13 26 | 2,893 | 66,602 | 23 02 | 52,184 | 723,010 |
| 1885. .. | 42,279 | 545,426 | 12 90 | 1,119 | 27,333 | 24 43 | 43,398 | 572,759 |
| 1886 ... | 42,463 | 528,483 | 12 45 | 3,185 | 60,086 | 18 87 | 45,648 | 588,569 |
| 1887..... | 46,295 | 554,388 | 11 98 | 3,919 | 77,420 | 19 76 | 50,214 | 631,808 |
| 1888.... | (b)48,973 | 648,012 | 13 23 | ......... | ......... | ......... | 48,973 | 648,012 |
| 1889.... . | (b)72,115 | 864,752 | 11 99 | ......... | ......... | ......... | 72,115 | 864,752 |
| 1890 .. . | (b) 87,613 | 1,148,078 | 13 10 | ......... | ......... | ......... | 87,613 | 1,148,078 |
| 1891 ... .. | (b) 81,317 | 1,085,929 | 13 35 | ......... | ......... | ......... | 81,317 | 1,085,929 |
| 1892. .. | (b) 68,918 | 886,485 | 12 86 | ......... | ......... | ......... | 68,918 | 886,485 |
| 1893 .. | 56,849 | 682,209 | 12 00 | 5,944 | 84,358 | 14 19 | 62,793 | 766,567 |
| 1894 .. | 42,376 | 483,787 | 11 42 | 2,906 | 34,968 | 12 03 | 45,282 | 518,755 |
| 1895. .. | 31,637 | 341,259 | 10 80 | 2,780 | 31,171 | 11 21 | 34,417 | 372,430 |
| 1896 ... | 36,131 | 394,591 | 10 92 | 917 | 11,726 | 12 79 | 37,048 | 406,317 |
| 1897 ... | 25,766 | 291,788 | 11 32 | 2,936 | 35,373 | 12 05 | 28,702 | 327,161 |
| 1898......... | 37,186 | 382,103 | 10 28 | 2,250 | 23,533 | 10 46 | 39,436 | 405,636 |
| 1899......... | 44,261 | 452,911 | 10 23 | 1,955 | 19,123 | 9 78 | 46,216 | 472,034 |
| 1900......... | 49,767 | 811,490 | 16 31 | 1,816 | 38,736 | 21 33 | 51,583 | 850,226 |
| 1901......... | 35,293 | 548,033 | 15 53 | 490 | 7,121 | 14 53 | 35,783 | 555,154 |
| 1902......... | 39,978 | 585,077 | 14 64 | 38 | 726 | 19 11 | 40,016 | 585,803 |
| 1903......... | 91,730 | 1,338,574 | 14 59 | 882 | 16,352 | 18 54 | 92,612 | 1,354,926 |
| 1904..... . | 62,515 | 894,728 | 14 31 | ......... | ......... | ......... | 62,515 | 894,728 |
| 1905......... | 71,005 | 857,879 | 12 08 | ......... | ......... | ......... | 71,005 | 857,879 |
| 1906......... | 96,797 | 1,401,047 | 14 47 | ......... | ......... | ......... | 96,797 | 1,401,047 |
| 1907......... | 150,127 | 2,280,860 | 15 19 | 30 | 675 | 22 33 | 150,157 | 2,281,535 |
| 1908......... | 210,053 | 3,448,125 | 16 42 | 2,237 | 45,475 | 20 33 | 212,290 | 3,493,600 |
| 1909....... | 57,669 | 857,357 | 14 87 | 922 | 16,575 | 17 98 | 58,591 | 873,932 |
| 1910......... | 158,910 | 2,118,445 | 13 33 | 596 | 8,690 | 14 58 | 159,506 | 2,127,135 |
| 1911....... . | 254,284 | 3,376,843 | 13 28 | 15,818 | 237,088 | 14 99 | 270,102 | 3,613,931 |
| 1912......... | 201,058 | 2,495,859 | 12 41 | 54 | 618 | 11 44 | 201,112 | 2,496,477 |

(a) Comprises pig iron of all kinds.

(b) These figures appear in Customs reports under heading "iron in pigs, iron kentledge. and cast iron."

(c) Year ending June 30.

(d) Nine months ending March 31.

(e) Year ending December 31.

IRON.—TABLE 13.

## Annual Exports of Pig Iron, 1896 1912.

| Calendar Year | Tons. | Value. | Average value. | Calendar Year. | Tons. | Value. | Average value. |
|---|---|---|---|---|---|---|---|
| | | $ | $ cts. | | | $ | $ cts. |
| 1896 | 2,187 | 55,448 | 25 35 | 1905. | 866 | 22,284 | 25 73 |
| 1897 | 3,099 | 81,381 | 26 26 | 1906. | 305 | 7,429 | 24 36 |
| 1898 | 1,278 | 32,645 | 25 54 | 1907. | 439 | 13,504 | 30 76 |
| 1899 | 6,981 | 149,190 | 21 37 | 1908. | 290 | 10,614 | 36 60 |
| 1900 | 3,513 | 88,052 | 25 06 | 1909. | 5,063 | 186,778 | 36 89 |
| 1901 | 57,650 | 593,739 | 10 30 | 1910. | 9,763 | 296,310 | 30 35 |
| 1902 | 75,195 | 778,619 | 10 35 | 1911. | 5,870 | 271,968 | 46 33 |
| 1903 | 4,400 | 78,382 | 17 81 | 1912. | 6,976 | 310,702 | 44 54 |
| 1904 | 21,016 | 200,363 | 9 53 | | | | |

*World's Production.*—The production of pig iron in other countries is given hereunder for the past six years, in order to show the relative position occupied by Canada in the production of this metal.

IRON.—TABLE 14.

## Production of Pig Iron in Principal Countries of the World, from 1907 to 1912: metric tons.

| — | 1907. | 1908. | 1909. | 1910. | 1911. | 1912. |
|---|---|---|---|---|---|---|
| United States | 26,195,340 | 16,191,907 | 26,209,677 | 27,741,990 | 24,029,296 | 30,665,595 |
| Germany | 12,875,159 | 11,805,321 | 12,644,946 | 14,227,455 | 15,280,527 | 17,852,571 |
| United Kingdom | 10,276,689 | 9,2[illegible],280 | 9,685,045 | 10,380,799 | 9,874,693 | |
| France | 3,590,235 | 3,400,771 | 3,573,848 | 4,032,459 | 4,410,866 | 4,871,992 |
| Russia | 2,823,309 | 2,805,384 | 2,874,822 | 3,042,302 | 3,588,449 | 4,184,124 |
| Austria-Hungary | 1,872,684 | 2,041,523 | 2,044,573 | 2,006,842 | (a) 2,089,867 | |
| Belgium | 1,406,980 | 1,270,050 | 1,616,370 | 1,803,500 | (a) 2,072,843 | |
| Canada | 591,456 | 572,290 | 686,893 | 726,478 | 832,38[illegible] | 920,422 |
| Sweden | 615,778 | 567,821 | 444,764 | 604,300 | 633,800 | 699,816 |
| Spain | 355,240 | 403,554 | 389,000 (a) | 425,000 (a) | 435,000 | |
| Italy | 112,232 | 112,924 | 207,800 (a) | 343,600 (a) | 253,322 | 373,153 |
| China | *36,306 | 66,409 | 74,000 (a) | 120,000 | 94,826 | |
| Japan | 51,943 | 45,396 (a) | 161,020 | 187,793 (a) | 162,000 | |
| Australasia | 29,902 | 30,393 | 29,762 | 42,268 (a) | 36,354 | |

*Exports. (*a*) From statistics by James Watson & Co., Glasgow, Scotland.

## FERRO-PRODUCTS.

Ferro-silicon, ferro-phosphorus, and ferro-titanium, were produced in Canada in electric smelting plants, in 1912, the latter two in small quantities only. Ferro-silicon is made at Sault Ste. Marie and at Welland, Ont., ferro-phosphorus at Buckingham, Que., and ferro-titanium at Welland, Ont. The Electric Reduction Company at Buckingham, Que., in former years also manufactured other ferro products, including ferro-silicon and ferrochrome.

The Electro Metals, Limited, at Welland, Ont., was chiefly engaged in the production of ferro-silicon. This firm has also made ferro-titanium in small quantities, as well as carried out experimental work in the production of pig iron in electric furnaces.

The Algoma Steel Corporation operated their electric furnace at Sault Ste. Marie for a very short period only during the year.

The total production in electric furnace plants during 1912 was 7,834 short tons of ferro products, valued at $465,225. In 1911 the production was 7,507 short tons, valued at $376,404.

The imports of ferro-silicon, ferro-manganese, etc., during the calendar year 1912, were 19,810 tons valued at $469,884, or an average of $23.72 per ton. The imports for the calendar year 1911 were 17,226 tons, valued at $429,465, or an average of $24.93 per ton; and in 1910, 18,900 tons, valued at $464,741, or an average of $24.59 per ton. The imports since 1887 are shown in Table 15, the figures of the table being for fiscal years.

IRON.—TABLE 15.

### Imports of Ferro-Manganese, Ferro-Silicon, Etc.

| Fiscal Year. | Tons. | Value. | Average value. | Fiscal Year. | Tons. | Value. | Average value. |
|---|---|---|---|---|---|---|---|
| | | $ | $ cts. | | | $ | $ cts. |
| *1887 | 123 | 1,435 | 11 67 | †1900 | 1,149 | 39,064 | 34 00 |
| *1888 | 1,883 | 29,812 | 15 83 | †1901 | 1,512 | 38,954 | 25 76 |
| *1889 | 5,868 | 72,108 | 12 29 | †1902 | 6,513 | 150,977 | 23,18 |
| *1890 | 696 | 18,895 | 27 15 | †1903 | 6,350 | 162,710 | 25 62 |
| *1891 | 2,707 | 40,711 | 15 04 | †1904 | 2,975 | 75,554 | 25 40 |
| *1892 | 1,311 | 23,930 | 18 25 | †1905 | 12,935 | 246,815 | 19 08 |
| *1893 | 529 | 15,858 | 29 98 | †1906 | 15,023 | 462,739 | 29 80 |
| *1894 | 284 | 9,885 | 34 81 | †1907 (9 mos.) | 16,414 | 610,875 | 37 22 |
| †1895 | 164 | 5,408 | 32 98 | †1908 | 17,417 | 612,062 | 35 14 |
| †1896 | 652 | 12,811 | 19 65 | †1909 | 13,053 | 388,024 | 29 73 |
| †1897 | 426 | 9,233 | 21 67 | †1910 | 14,952 | 332,486 | 22 24 |
| †1898 | 1,418 | 22,516 | 15 88 | †1911 | 18,796 | 461,331 | 24 54 |
| †1899 | 1,160 | 22,539 | 19 43 | †1912 | 18,274 | 443,770 | 24 28 |

* These amounts include: ferro-manganese, ferro-silicon, spiegel, steel bloom ends and crop ends of steel rails, for the manufacture of iron and steel.

†Ferro-silicon, spiegeleisen, and ferro-manganese.

## STEEL.

The production of steel ingots and castings in 1912 was 957,681 tons, as compared with 882,396 tons in 1911, and 822,284 tons in 1910. In 1912 the production of open-hearth ingots was reported as 692,236 tons; Bessemer ingots, 231,044 tons; direct open-hearth castings, 31,845 tons; and other steels, 2,556 tons. The total increase in production over 1911 was 75,285 tons, or a little over 8·5 per cent.

The production during the past five years is shown in Table 16, following:—

IRON.—TABLE 16.

### Production of Steel, 1908-12.

| — | 1908. | 1909. | 1910. | 1911. | 1912. |
|---|---|---|---|---|---|
| | Tons. | Tons. | Tons. | Tons. | Tons. |
| *Ingots*—Open-hearth (basic) | 443,442 | 535,988 | 580,932 | 651,676 | 692,236 |
| Bessemer (acid) | 135,557 | 203,715 | 222,668 | 209,817 | 231,044 |
| *Castings*—Open-hearth | 9,051 | 14,013 | 18,085 | 20,163 | 31,845 |
| Other steels | 713 | 1,003 | 599 | 740 | 2,556 |
| Total | 588,763 | 754,719 | 822,284 | 882,396 | 957,681 |

Statistics showing the principal materials used in steel furnaces were obtained for the first time in the year 1910. The total quantity of pig iron used in steel furnaces during 1912 was 735,559 tons, of which 706,895 tons were produced by firms reporting, and 28,664 tons purchased. The quantity of ferro-alloys used was 24,237 tons purchased. Scrap, etc., was used to the extent of 336,265 tons, being 223,404 tons produced by the firms reporting, and 112,861 tons purchased. Ores used included 985 tons of manganese ore and 43,006 tons of iron ore, while 148,045 tons of limestone or dolomite flux were used, and 9,709 tons of fluorspar. In Ontario a little over 423 million cubic feet of natural gas were used, while in Nova Scotia coke oven gas was used at Sydney, of which a record of quantity was not obtained.

In 1911 the total quantity of pig iron used in steel furnaces was 700,679 tons, of which 640,636 tons were produced by firms reporting, and 60,043 tons purchased. The quantity of ferro-alloys used was 21,359 tons purchased. Scrap, etc., was used to the extent of 278,797 tons, being 198,482 tons produced by the firms reporting, and 80,315 tons purchased. Ores used included 829 tons of manganese ore and 42,892 tons of iron ore, while 130,270 tons of limestone or dolomite flux were used and 8,067 tons of fluorspar. In Ontario a little over 662 million cubic feet of natural gas were used.

Statistics of the production of steel ingots and castings since 1894 are given in the following table, the figures for 1894 to 1906, inclusive, having been collected and published by the American Iron and Steel Association; those for the years 1907 to 1912 have been collected by this department and are as shown in detail in Table 16.

IRON.—TABLE 17.

## Annual Production of Steel Ingots and Castings, 1894-1912.

| Calendar Year. | Short tons. | Calendar Year. | Short tons. | Calendar Year. | Short tons. |
|---|---|---|---|---|---|
| 1894 | 28,767 | 1901 | 29,214 | 1908 | 588,763 |
| 1895 | 19,040 | 1902 | 203,881 | 1909 | 754,719 |
| 1896 | 17,920 | 1903 | 203,296 | 1910 | 822,284 |
| 1897 | 20,608 | 1904 | 166,381 | 1911 | 882,396 |
| 1898 | 24,125 | 1905 | 451,863 | 1912 | 957,681 |
| 1899 | 24,640 | 1906 | 639,396 | | |
| 1900 | 26,406 | 1907 | 706,982 | | |

Following is a list of firms making steel in Canada:—

Londonderry Iron and Mining Co., Ltd., Montreal, Que.
Dominion Iron and Steel Company, Sydney, N. S.
Nova Scotia Steel and Coal Company, New Glasgow, N.S,
Canadian Steel Foundries, Ltd., Montreal, Que.
Beauchemin et Fils, Sorel, Que.
The Algoma Steel Company, Sault Ste. Marie, Ont.
The Steel Company of Canada, Ltd., Hamilton, Ont.
The Dominion Steel Castings Co., Ltd., Hamilton, Ont.
The Wm. Kennedy & Sons, Ltd., Owen Sound, Ont.

*Rolled Products, etc.*—Complete statistics of the production of rolled products and of manufactured steel have not been received; returns from seven of the largest producers, however, show a production of blooms, billets, slabs, etc., of 739,928 tons, of which 717,658 tons were used by the producer for further manufacture, and 22,270 tons sold to other rolling mills.

The production of rails was 471,422 tons; of rods, 68,174 tons; of bars, 264,226 tons; and of other rolled products, 39,012 tons. The production of steel rails in 1911 was returned as 399,760 tons, and in 1910, 399,762 tons.

The production of finished rolled iron and steel in Canada from 1906 to 1911, as ascertained and published by the American Iron and Steel Association, was as follows, in long tons:—

IRON.—TABLE 18.

## Annual Production of Rolled Iron and Steel, 1908-12.

| Products—Gross tons. | 1908. | 1909. | 1910. | 1911. | 1912. |
|---|---|---|---|---|---|
| Rails | 268,692 | 344,830 | 366,465 | 360,547 | 423,885 |
| Structural shapes and wire rods | 41,520 | 74,136 | 80,993 | 76,617 | 64,082 |
| Plates and sheets | 11,656 | 36,241 | 26,642 | 14,833 | 373,257 |
| Nail plate, merchant bars, and all other finished rolled forms | 174,649 | 207,534 | 265,711 | 323,427 | |
| Total | 496,517 | 662,741 | 739,811 | 775,424 | 861,224 |

## BOUNTIES.

Bounties on iron and steel made in Canada were provided for by the Dominion Government in 1897 under the authority of Chapter 6, Statutes of Canada 1897. These bounties were continued under subsequent statutes until 1911. Bounty on pig iron and steel made in electric furnaces was available until December 31, 1912, but no claims therefor were made during the year.

Since 1896 a total of $16,785,827 has been paid by the Government of Canada in bounties for the production of iron and steel, the annual payments on pig iron, puddled iron bars, steel and manufactures of steel being shown in the following table:—

### Total Bounties on Iron and Steel Paid by the Government of Canada Since 1896.

| Year ended. | Pig iron. | Puddled iron bars. | Steel. | Manufactures of steel. |
|---|---|---|---|---|
| | $ | $ | $ | $ |
| June 30, 1896 | 104,105 | 5,611 | 59,499 | |
| " 1897 | 66,509 | 3,019 | 17,366 | |
| " 1898 | 165,654 | 7,706 | 67,454 | |
| " 1899 | 187,954 | 17,511 | 74,644 | |
| " 1900 | 238,296 | 10,121 | 64,360 | |
| " 1901 | 351,259 | 16,703 | 100,058 | |
| [illegible] | 693,106 | 20,550 | 77,431 | |
| | 666,001 | 6,702 | 729,102 | |
| " [illegible] | 533,982 | 11,669 | 347,990 | 15,321 |
| " [illegible] | 624,667 | 7,895 | 676,318 | 231,324 |
| " 1906 | 687,632 | 5,875 | 941,000 | 369,832 |
| March 31, 1907 (9 months) | 385,231 | 312 | 575,259 | 338,999 |
| " 1908 | 863,817 | | 1,092,201 | 347,135 |
| " 1909 | 693,423 | | 838,100 | 333,091 |
| " 1910 | 573,969 | | 695,752 | 538,812 |
| " 1911 | 261,434 | | 350,456 | 526,858 |
| " 1912 | | | | 166,750 |
| Total | 7,097,041 | 113,674 | 6,706,990 | 2,868,122 |

## EXPORTS AND IMPORTS OF IRON AND STEEL GOODS.

The exports of iron and steel from Canada consist chiefly of manufactured goods such as agricultural implements, automobiles, bicycles, machinery, etc. Compared with the value of imports, the total value of the exports is small amounting to not more than 10 per cent of the former. The total value of iron and steel exported during the calendar year 1912 was $10,682,484, as compared with a value of exports in 1911 of $9,907,281, and in 1910, $7,895,489. The exports during 1912 included pig iron and ferro products, etc., to the value of $310,702; scrap iron and steel, valued at $145,250; stoves, gas buoys, castings, machinery, hardware, etc., valued at $1,290,762; steel and manufactures of steel,

$785,731; agricultural implements, $5,967,545; automobiles and bicycles, $2.182,494.

The exports during 1911 in similar grouping were: pig iron and ferro products, $271,968; scrap iron and steel, $54,618; stoves, gas buoys, castings, machinery, hardware, etc., $1,242,006; steel and manufactures of steel, $769,692; agricultural implements, $6,281,929; automobiles and bicycles, $1,287,068. The principal increase in exports is apparently in automobiles and bicycles. Particulars of these exports during the past two years are shown in further detail in the accompanying table.

IRON.—TABLE 19.

### Exports of Iron and Steel Goods, the Product of Canada, during the Calendar Years 1911 and 1912.

| | | 1911. | | | 1912. | | |
|---|---|---|---|---|---|---|---|
| | | Quantity. | Value. | Average value. | Quantity. | Value. | Average value. |
| | | | $ cts. | $ | | $ | $ cts. |
| Stoves | No. | 1,176 | 20,626 | 17 54 | 1,390 | 21,110 | 15 19 |
| Gas buoys and parts of | $ | | 68,185 | | | 83,583 | |
| Castings, N.E.S. | $ | | 53,441 | | | 27,113 | |
| Pig iron | Tons | 5,870 | 271,968 | 46 33 | 6,976 | 310,702 | 44 54 |
| Machinery (linotype machines) | $ | | 12,239 | | | 6,555 | |
| Machinery, N.E.S. | $ | | 451,493 | | | 474,696 | |
| Sewing machines | No. | 18,519 | 218,075 | 11 78 | 24,158 | 259,617 | 10 75 |
| Typewriters | " | 4,771 | 318,935 | 66 85 | 4,025 | 277,583 | 68 96 |
| Scrap iron and steel | Tons. | 4,208 | 54,618 | 12 99 | 16,632 | 145,250 | 8 73 |
| Hardware, tools, etc | $ | | 94,513 | | | 91,731 | |
| Hardware, N.E.S. | " | | 14,199 | | | 48,474 | |
| Steel and manufactures of. | " | | 769,692 | | | 785,731 | |
| Agricultural implements - | | | | | | | |
| Mowing machines | No. | 22,859 | 778,274 | 34 05 | 16,213 | 562,502 | 34 69 |
| Reapers | " | 9,385 | 574,315 | 61 19 | 3,243 | 195,156 | 60 19 |
| Harvesters | " | 14,355 | 1,432,911 | 99 82 | 15,341 | 1,634,208 | 106 53 |
| Ploughs | " | 20,437 | 508,095 | 24 86 | 13,580 | 412,460 | 30 37 |
| Harrows | " | 5,412 | 95,904 | 17 72 | 4,734 | 100,579 | 21 25 |
| Hay rakes | " | 11,085 | 317,842 | 28 67 | 6,646 | 199,092 | 29 96 |
| Seeders | " | 174 | 13,795 | 79 28 | 70 | 7,040 | 100 57 |
| Threshing machines | " | 339 | 92,442 | 272 69 | 761 | 214,499 | 281 86 |
| Cultivators | " | 5,923 | 138,377 | 23 36 | 5,059 | 100,043 | 19 78 |
| All other | " | | 1,533,728 | | | 1,964,071 | |
| Parts of | " | | 796,246 | | | 577,895 | |
| Automobiles | " | 1,509 | 1,184,506 | 785 00 | 3,028 | 2,013,784 | 665 00 |
| " parts of | " | | 45,798 | | | 105,330 | |
| Bicycles | " | 90 | 5,936 | 65 96 | 101 | 9,058 | 89 68 |
| " parts of | " | | 50,828 | | | 54,322 | |
| Total | | | 9,907,281 | | | 10,682,484 | |

The total value of the imports of iron and steel goods during the calendar year 1912 was $121,376,986, as against a value of $93,171,817 imported in 1911, and $75,758,594 in 1910. While the total value of the imports during the calendar year is thus shown, it is not convenient to show the imports of detailed items for this period, since the statistics published in the annual reports of the Customs Department cover the fiscal year ending in March.

The total value of the imports for the fiscal year ending March, 1912, was $102,568,832, as compared with a value of imports during the fiscal year 1911 of $85,319,541, and $59,952,197 imported during the fiscal year 1910. The rapid growth in imports of iron and steel is thus illustrated by the difference in figures covering the fiscal and calendar years, a nine months period. A detailed statement of the imports of iron and steel during the fiscal year is shown in Tables 21 and 22, Table 24 showing the imports subject to the duty, and Table 22 showing the imports free of duty. These imports include all classes of iron and steel goods manufactured as well as those of the cruder form. In many cases the values only of the imported goods are given, so that a total tonnage of imports cannot be estimated. In the case of most of the cruder materials, however, the quantities are given and a compilation of these showing the importation of the cruder forms of iron and steel during the fiscal year ending March, 1912, is shown in Table 20. The quantity of these imports in 1912 was 1,323,348 tons, valued at $37,709,118, or an average of $28.50 per ton, as compared with imports of 1,172,380 tons, valued at $33,838,905, or an average of $28.84 per ton in 1911. Other iron and steel goods imported during 1912, and of which the weight is not given, were valued at $64,859,714, and the value of similar imports in 1911 was $51,480,636.

The imports of the cruder forms of iron and steel included: 200,317 tons of pig iron in 1912, as against 270,102 tons in 1911; ferro products and chrome steel, 18,865 tons in 1912, as against 19,173 tons in the previous year; ingots, blooms, billets, puddled bars, etc., 88,075 tons in 1912, as compared with 48,395 tons in 1911; scrap iron and steel, 82,665 tons in 1912, and 53,821 tons in 1911; plates and sheets, 243,482 tons in 1912, as compared with 205,690 tons in the previous year; bars, rods, hoops, bands, etc., 195,145 tons in 1912, as against 183,865 tons in 1911; structural iron and steel, 268,573 tons in 1912, and 232,585 tons in 1911, steel rails and connexions, 98,083 tons, as compared with 36,690 tons in 1911; pipe and fittings, 26,627 in 1912, and 28,831 tons in 1911; nails and spikes, 7,201 tons in 1912, and 3,374 tons in 1911; wire, 69,650 tons in 1912, as against 64,850 tons in 1911; forgings, castings, and manufactures, 24,665 tons in 1912, and 24,992 tons in 1911.

A very large proportion of these imports is derived from the United States, and it may be of interest here to quote from the records published in the 'Commerce and Navigation of the United States,' showing the exports of iron and steel goods from that country to Canada.

According to this authority there was exported to Canada from the United States during the twelve months ending June 30, 1912, 1,175,464 tons of iron and steel goods, valued at $36,637,305, together with other iron and steel goods of which the weight is not given, valued at $46,020,989—or a total value of imports from the United States of $82,658,924.

During the twelve months ending June 30, 1911, the corresponding exports to Canada were 821,526 tons, valued at $25,544,421, together with other iron and steel goods of which the weight is not given, valued at $38,738,575—or a total value during the year of $64,289,996.

The detailed items making up these totals are shown in Table 23.

TABLE 20.

## Imports of Certain Iron and Steel Products.*

| Material. | TWELVE MONTHS ENDING MARCH 1912. | | |
|---|---|---|---|
| | Tons. | Value. | Average. |
| | | $ | $ cts |
| Pig iron | 200,317 | 2,706,848 | 13 51 |
| Ferro-products and chrome steel | 18,865 | 461,140 | 24 44 |
| Ingots, blooms, billets, puddled bars, etc | 88,075 | 1,641,919 | 18 64 |
| Scrap iron and scrap steel | 82,665 | 1,217,556 | 14 73 |
| Plates and sheets | 243,482 | 8,288,144 | 34 04 |
| Bars, rods, hoops, bands, etc | 195,145 | 6,630,802 | 33 98 |
| Structural iron and steel | 268,573 | 7,033,146 | 26 18 |
| Rails and connexions | 98,083 | 2,878,835 | 29 35 |
| Pipe and fittings | 26,627 | 1,180,149 | 44 32 |
| Nails and spikes | 7,201 | 291,236 | 40 44 |
| Wire | 69,650 | 3,841,654 | 55 16 |
| Forgings, castings, and manufactures | 24,665 | 1,537,689 | 62 34 |
| Total | 1,323,345 | 37,709,118 | 28 50 |

| Material. | TWELVE MONTHS ENDING MARCH. | | | |
|---|---|---|---|---|
| | 1908. | 1909. | 1910. | 1911. |
| | Tons. | Tons. | Tons. | Tons. |
| Pig iron | 212,290 | 58,591 | 159,506 | 270,102 |
| Ferro-products and chrome steel | 17,661 | 13,206 | 15,153 | 19,182 |
| Ingots, blooms, billets, puddled bars, etc | 21,222 | 8,887 | 36,819 | 48,395 |
| Scrap iron and scrap steel | 69,213 | 26,212 | 28,797 | 53,824 |
| Plates and sheets | 126,172 | 116,610 | 200,575 | 205,690 |
| Bars, rods, hoops, bands, etc | 98,631 | 73,261 | 117,159 | 183,865 |
| Structural iron and steel | 373,871 | 162,735 | 195,748 | 232,585 |
| Rails and connexions | 52,706 | 32,543 | 55,183 | 36,690 |
| Pipe and fittings | 25,090 | 18,309 | 16,705 | 28,831 |
| Nails and spikes | 2,741 | 1,611 | 3,476 | 3,374 |
| Wire | 57,046 | 39,375 | 68,211 | 64,850 |
| Forgings, castings, and manufactures | 22,357 | 14,394 | 18,093 | 24,523 |
| Total | 1,079,000 | 565,734 | 915,425 | 1,172,380 |

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*In addition to these imports there is a large importation of manufactured iron and steel, of which the weight is not given, but the values of which are shown in Tables 21 and 22.

IRON.—TABLE 21.

## Imports of Iron and Steel Goods Subject to Duty.

| Material. | | Twelve months ending March, 1911. | | Twelve months ending March, 1912. | |
|---|---|---|---|---|---|
| | | Quantity. | Values. | Quantity. | Values. |
| | | | $ | | $ |
| Agricultural implements, N.O.P., viz.— | | | | | |
| Binding attachments | $ | | 10,022 | | 26,327 |
| Cultivators and weeders | No | 6,296 | 59,064 | 6,895 | 67,253 |
| Drills, seed | .. | 6,886 | 355,821 | 7,042 | 349,618 |
| Farm, road, or field rollers | .. | 118 | 64,305 | 212 | 56,374 |
| Forks, pronged | .. | 20,982 | 10,018 | 10,762 | 5,802 |
| Harrows | .. | 15,001 | 229,911 | 11,763 | 143,546 |
| Harvesters, self-binding | .. | 1,110 | 115,794 | 2,531 | 264,890 |
| Hay loaders | .. | 453 | 25,272 | 796 | 39,643 |
| Hay tedders | .. | 9 | 261 | 104 | 4,360 |
| Hoes | .. | 4,737 | 1,210 | 8,481 | 2,322 |
| Horse rakes | .. | 851 | 26,967 | 999 | 30,448 |
| Knives, hay or straw | .. | 8,213 | 4,517 | 13,226 | 2,311 |
| Knives edging | .. | 56 | 72 | 24 | 93 |
| Lawn mowers | .. | 8,783 | 32,412 | 12,843 | 49,843 |
| Manure spreaders | .. | 705 | 65,562 | 349 | 27,504 |
| Mowing machines | .. | 1,367 | 52,999 | 2,116 | 79,539 |
| Ploughs | .. | 52,972 | 1,993,214 | 42,338 | 1,352,214 |
| Post hole diggers | .. | 4,213 | 4,368 | 3,929 | 4,378 |
| Potato diggers | .. | 626 | 16,767 | 866 | 17,083 |
| Rakes, N.O.P. | .. | 58,769 | 10,689 | 15,425 | 3,761 |
| Reapers | .. | 827 | 60,677 | 1,380 | 75,455 |
| Scythes | Doz. | 2,286 | 10,559 | 2,977 | 12,308 |
| Sickles or reaping hooks | .. | 529 | 1,163 | 297 | 843 |
| Snaths | .. | 15 | 30 | 19 | 81 |
| Spades and shovels of iron or steel, N.O.P. | .. | 9,539 | 45,751 | 10,069 | 31,615 |
| Spade and shovel blanks, and iron or steel cut to shape for the same | .. | 3,247 | 5,448 | 3,382 | 5,774 |
| Parts of agricultural implements paying 12½ per cent and 17½ per cent | $ | | 464,202 | | 425,140 |
| Parts of agricultural implements paying 12½, 17½, and 20 per cent | .. | | 765,844 | | 1,057,080 |
| All other agricultural implements, N.O.P. | .. | | 83,226 | | 107,580 |

IRON.—TABLE 21—*Continued.*

## Imports of Iron and Steel Goods Subject to Duty—*Continued.*

| Material. | | Twelve months ending March, 1911. | | Twelve months ending March, 1912. | |
|---|---|---|---|---|---|
| | | Quantity. | Value. | Quantity. | Value. |
| | | | $ | | $ |
| Anvils and vises | $ | | 104,670 | | 78,204 |
| Cart or wagon skeins or boxes | Tons | 114·8 | 9,488 | 265·2 | 20,987 |
| Springs, N.O.P. and parts thereof, of iron or steel, for railway, tramway, or other vehicles | " | 333·1 | 33,544 | 635·1 | 63,042 |
| Axle and axle parts, N.O.P., and axle blanks and parts thereof, of iron or steel for railway, tramway, or other vehicles | " | 2,911·7 | 214,261 | 3,616 | 289,800 |
| Bar iron or steel, rolled, whether in coils, bundles, rod or bars, comprising rounds, ovals, squares, and flats, N.O.P | " | 104,895·7 | 3,179,921 | 105,225·3 | 2,948,456 |
| Butts and hinges N.O.P | $ | | 94,450 | | 109,322 |
| Canada plates, Russia iron, terne plate, and rolled sheets of iron and steel coated with zinc, spelter, or other metal, of all widths or thicknesses, N.O.P | Tons | 1,488·3 | 93,118 | 4,569·8 | 213,729 |
| Castings, iron or steel, N.O.P | $ | | 826,365 | | 1,102,096 |
| Cast iron pipe of every description | Tons | 25,046 | 562,008 | 20,822·5 | 490,944 |
| Cast scrap iron | " | 20,522 | 266,626 | 35,718 | 422,925 |
| Chains, coil chain, chain links, and chain shackles of iron or steel of ⅝" diameter, and over | " | 3,053·5 | 191,588 | 3,281·7 | 159,288 |
| Chains, N.O.P | $ | | 94,645 | | 113,425 |
| Tacks, shoe | Tons | 6 | 1,634 | 16·3 | 2,986 |
| Nails, brads, spikes, and tacks of all kinds, N.O.P | " | 269·5 | 31,311 | 702·5 | 47,277 |
| Engines, etc.:— | | | | | |
| Locomotives for railways | No. | 98 | 297,512 | 152 | 495,195 |
| Locomotive parts | $ | | 64,898 | | 69,276 |
| Motor cars for railway and tramways | No. | 8 | 14,119 | 49 | 101,182 |
| Engines, fire | " | 16 | 17,435 | 22 | 21,139 |
| Engines, gasoline | " | 9,045 | 1,465,035 | 15,439 | 2,206,495 |
| Engines, steam | " | 284 | 244,394 | 322 | 276,156 |
| Boilers, steam | " | 567 | [illegible]0,616 | 631 | 236,308 |
| Boilers, N.O.P | " | 1,364 | 38,632 | 3,217 | 247,645 |
| Fire extinguishing machines, including sprinklers for fire protection | $ | | 77,007 | | 97,422 |
| Fittings, iron or steel, for iron or steel pipe of every description | Tons. | 3,785·4 | 465,954 | 5,804·8 | 689,395 |
| Flat eye-bar blanks, not punched or drilled, for use exclusively in the manufacture of bridges or of steel structural work, or in car construction | " | 137 | 3,800 | 15 | 649 |

| | | | | | |
|---|---|---|---|---|---|
| Ferro-silicon, spiegeleisen, and ferro-manganese | Tons. | ,796 | 461,331 | 18,591 | [redacted] |
| Forging of iron and steel of whatever size, shape, or in whatever stage of manufacture N.O.P., and steel shafting turned, compressed or polished and hammered, drawn or cold rolled iron or steel bars or shapes, N.O.P. | " | 1,212 5 | 125,030 | 1,329·2 | 138,317 |
| Hardware, viz., builders, cabinet-makers, upholsterers, harness-makers, saddlers, and carriage hardware, including curry-combs, N.O.P. | $ | | 681,050 | | 720,101 |
| Horse, mule, and ox shoes | " | | 18,973 | | 21,449 |
| Iron or steel billets, weighing not less than 60 pounds per lineal yard | Tons. | 44,456·5 | 861,056 | 84,738·4 | 1,572,614 |
| Iron or steel ingots, cogged ingots, blooms, slabs, puddled bars and loops, or other forms, N.O.P., less finished than iron or steel bars, but more advanced than pig iron except castings | " | 3,227 8 | 68,616 | 2,608·2 | [redacted] |
| Iron or steel bridges or parts thereof, iron or steel structural work, columns, shapes, or sections, drilled, punched, or in any further stage of manufacture than as rolled or cast, N.O.P. | Tons. | 6,264·8 | 328,011 | 13,419·8 | 651,244 |
| Iron in pig | " | 254,284 | 3,376,843 | 199,412 | 2,469,760 |
| Iron in pig charcoal | " | 15,818 | 237,688 | 905 | [redacted] |
| Locks of all kinds | $ | | 459,081 | | 478,490 |
| Machines, machinery, etc. | | | | | |
| Automobiles and motor vehicles of all kinds | No. | 3,488 | 4,235,196 | 6,062 | 6,551,345 |
| Automobiles and motor vehicles, parts of | $ | | 522,223 | | 879,471 |
| Fanning mills | No. | 2,246 | 29,319 | 3,648 | 52,230 |
| Grain crushers | " | 92 | 2,405 | 78 | 1,419 |
| Windmills and complete parts thereof | " | 1,482 | 51,805 | 1,643 | 47,436 |
| Ore crushers and rock crushers, stamp mills, cornish and belted rolls, rock drills, air compressors, cranes, derricks, and percussion coal cutters | $ | | 265,085 | | 256,509 |
| Portable machines:— | | | | | |
| Fodder or feed cutters | No. | 395 | 4,177 | 453 | 4,521 |
| Horse powers for farm purposes | " | 4 | 281 | 13 | 2,019 |
| Portable engines with boilers in combination and traction engines for farm purposes | " | 2,710 | 3,636,392 | 3,831 | 6,043,723 |
| Portable sawmills and planing mills | " | 36 | 17,204 | 3 | [redacted] |
| Steam shovels | " | 47 | 296,043 | 32 | 183,034 |
| Threshing machine separators | " | 1,286 | 741,360 | 2,857 | 1,403,713 |
| Threshing machine separators, parts of, including wind-stackers, baggers, weighers and self-feeders for same, and finished parts thereof for repairs, when imported separately | $ | | 422,044 | | 660,206 |
| All other portable machines, N.O.P., and parts | " | | 43,742 | | 40,667 |
| Sewing machines | No. | 14,968 | 351,525 | 15,489 | 333,411 |
| Sewing machines, parts of | $ | | 108,957 | | 128,572 |
| Machines, typewriting | No. | 11,230 | 686,976 | 16,780 | 974,942 |
| Machines, type-casting and type-setting, and parts thereof, adapted for use in printing offices | " | 134 | 228,325 | | 337,856 |
| Machines specially designed for ruling, folding, binding, embossing, creasing, or cutting paper or cardboard, when for use exclusively by printers, bookbinders, and by manufacturers of articles made from paper or cardboard, including parts thereof, composed wholly or in part of iron, steel, brass, or wood | " | 1,015 | 265,810 | | 309,722 |
| Lithographic presses and type-making accessories for same | $ | | 68,631 | | 105,925 |
| Printing presses | " | | 392,873 | | 502,330 |
| Machinery of a class or kind not made in Canada and parts thereof adapted for carding, spinning, weaving braiding, or knitting fibrous material, when imported by manufacturers for such purposes | " | | 893,413 | | 813,935 |
| All machinery composed w[illegible]r in part of iron or steel, N.O.P., and iron or steel castings, and iron or steel integral parts of [illegible]achinery specified in tariff item 453 | " | | 12,556,876 | | 15,389,799 |

IRON.—TABLE 21—*Continued*

## Imports of Iron and Steel Goods Subject to Duty—*Continued.*

| Material | | Twelve months ending March, 1911. | | Twelve months ending March, 1912 | |
|---|---|---|---|---|---|
| | | Quantity | Value | Quantity | Value |
| | | | $ | | $ |
| Portable machines—*Continued.* | | | | | |
| Machines, washing | No. | 5,751 | 36,373 | 7,141 | 56,636 |
| Nails and spikes, composition and sheathing nails | Tons | 96·5 | 8,717 | 132·5 | 8,981 |
| Nails and spikes, cut (ordinary builders) | " | 234·8 | 9,657 | 484·6 | 16,092 |
| Railway spikes | " | 2,229·2 | 71,135 | 4,991·0 | 160,394 |
| Nails, wire of all kinds, N.O.P. | " | 538·7 | 41,589 | 874·7 | 54,916 |
| Pumps, hand N.O.P. | No | 20,942 | 97,224 | 27,869 | 116,462 |
| Iron and steel railway bars or rails of any form, punched or not, N.O.P., for railways, which term for the purposes of this item shall include all kinds of railways, streets railways and tramways, even although they are used for private purposes only, and even although they are not used or intended to be used in connexion with the business of common carrying of goods or passengers | Tons | 32,784 | 905,984 | 92,[illegible] | 2,452,133 |
| Railway fish-plates | " | 1,490 | 60,788 | 3,090 | 131,639 |
| Railway tie-plates | " | 957 | 35,289 | 441 | 16,164 |
| Rolled iron or steel angles, tees, beams, channels, girders, and other rolled shapes or sections, not punched or drilled or further manufactured than rolled, N.O.P. | " | 56,516·1 | 1,580,387 | 63,539·8 | 1,635,857 |
| Rolled iron or steel beams, channels, angles, and other rolled shapes of iron and steel, not punched, drilled or further manufactured than rolled, weighing not less than 35 pounds per lineal yard, not being square, flat, oval, or round shapes, and not being railway bars or rails | " | 124,985·3 | 3,209,773 | 147,877·5 | 3,625,167 |
| Rolled iron or steel hoop, band, scroll, or strip, 12 inches or less in width, No. 13 gauge and thicker, N.O.P | " | 1,554·5 | 123,238 | 6,582·[illegible] | 197,454 |
| Rolled iron or steel hoop, band, scroll, or strip, No. 14 gauge and thinner, galvanized or coated with other metal or not, N.O.P | " | 8,142·9 | 396,162 | 14,059·9 | 570,032 |
| Rolled iron or steel sheets or plates, sheared or unsheared, and skelp iron or steel, sheared or rolled grooves, N.O.P. | " | 25,467·5 | 736,212 | 24,090 | 660,794 |
| Rolled iron or steel plates not less than 30" in width and not less than ¼" in thickness, N.O.P. | " | 44,[illegible]·2 | 1,223,212 | 37,565·4 | 969,881 |
| Rolled iron or steel sheets, polished or not, No. 14 gauge and thinner, N.O.P | " | 22,087·6 | 1,046,128 | 26,983·5 | 1,231,336 |
| Rolls of chilled iron or steel | " | 164·6 | 10,526 | 65·9 | 4,394 |
| Sad or smoothing hatters' and tailors' irons | Tons | | 5,596 | | 10,650 |
| Safes, doors for safes and vaults | " | | 193,530 | | 208,471 |
| Screws, iron and steel, commonly called 'wood screws,' N.O.P., including lag or coach screws, plated or not, and machine or other screws, N.O.P | Gross | 249,613 | 47,268 | 380,929 | 57,279 |

| | | | | | |
|---|---|---|---|---|---|
| Scales, balances, weighing beams, and strength-testing machines of all kinds | $ | | 113,176 | | [illegible] |
| Shafting, round, steel, in bars not exceeding 2½" diameter | Tons. | 2,929·3 | 119,498 | 2,726·6 | 102,704 |
| Sheets or plates of steel, cold rolled with sheared edges over 14 gauge, and not less than 1½" wide for the manufacture of mower bars, hinges, typewriters, and sewing machines | " | 794·7 | 35,789 | 557·5 | 24,041 |
| Sheets, flat, of galvanized iron or steel | " | 8,462·1 | 509,027 | 12,084·6 | 669,498 |
| Sheets, iron or steel, corrugated, galvanized | " | 132·7 | 9,468 | 158·6 | 6,683 |
| Sheets, iron or steel, corrugated, not galvanized | " | 0·5 | 76 | 89·1 | 4,055 |
| Skates of all kinds, roller or other, and parts thereof | Pairs | 138,766 | 80,255 | 142,791 | 72,573 |
| Skelp iron or steel, sheared or rolled in grooves, imported by manufacturers of wrought iron or steel pipe, for use exclusively in the manufacture of wrought iron or steel pipe in their own factories | Tons | 59,576·5 | 1,598,385 | 87,401·7 | 2,056,977 |
| Steel billets, N.O.P | " | 711·3 | 19,940 | 729·1 | 17,242 |
| Stoves of all kinds, for coal, wood, oil, spirits or gas | $ | | 694,309 | | 782,963 |
| Stove urns of metal, and dovetails, chaplets, and hinge tubes of tin for use in the manufacture of stoves | " | | 22,370 | | 21,959 |
| Switches, frogs, crossings, and intersections for railways | Tons. | 1,460·1 | 144,195 | 2,450 | 278,906 |
| Iron or steel railway bars or rails, which have been in use in the tracks of railways in Canada and which have been exported from Canada, and returned thereto after having been re-rolled, and weighing not less than 56 pounds per lineal yard when re-rolled and which are to be used by the railway company importing them on their own tracks | " | | | 6 | 2 |
| Tubing: | | | | | |
| Wrought or seamless tubing, iron or steel, plain or galvanized, threaded and coupled, or not, over 4" diameter, N.O.P. | $ | | [illegible] | .... | 447,390 |
| Wrought or seamless tubing, iron or steel, plain or galvanized, threaded and coupled, or not, 4" and less in diameter, N.O.P. | $ | | [illegible] | .... | 664,857 |
| Seamless steel tubing, valued at not less than 3½ cents per lb. Rolled or drawn square tubing of iron or steel, adapted for use in the manufacture of agricultural implements | Tons | 600·8 | 45,605 | 625·9 | 37,036 |
| Iron or steel pipe or tubing, plain or galvanized, riveted, corrugated or otherwise specially manufactured, including lockjoint pipe, N.O.P. | $ | | 1,894 | | 3,082 |
| Iron or steel pipe, not butt or lap welded, and wire bound wooden pipe not less than 30" internal diameter when for use exclusively in alluvial gold mining | " | | 285,190 | | 441,493 |
| Ware—Agate, granite, or enamelled iron or steel ware | " | | 22,509 | | 310 |
| Ware—Iron or steel hollow ware, plain black or coated, N.O.P., and nickel and aluminum kitchen or household hollow ware | " | | 167,686 | | 198,708 |
| Wire bale ties | " | | 79,507 | | 129,469 |
| | Bundles of 250 ties | 3,514 | 3,575 | 19,983 | 10,283 |
| Wire bound wooden pipe, N.O.P. | $ | | 1,143 | | 661 |
| Wire cloth or woven wire and netting of iron and steel | Tons | 1,276·6 | 140,037 | 1,246·3 | 153,973 |
| Wire, crucible cast steel, valued at not less than 6 cents per lb | " | 88·1 | 32,166 | 95·7 | 27,981 |
| Wire screens, doors, and windows | $ | | 26,065 | | 30,188 |
| Wire buckthorn strip fencing, woven wire fencing, and wire fencing of iron and steel, N.O.P., not to include woven wire or netting made from wire, smaller than No. 14 gauge, not to include fencing or wire larger than No. 9 gauge | Tons | 920·3 | 63,448 | 1,016·8 | 72,786 |
| Wire, single or several, covered with cotton, linen, silk, rubber, or other material, including cable so covered | " | 1,788·4 | 495,560 | 2,992·2 | 662,931 |
| Wire of iron and steel all kinds, N.O.P. | " | 4,485 | 271,402 | 5,739·9 | 288,197 |
| Wire rope, stranded or twisted wire clothes lines, picture or other twisted wire, and wire cables, N.O.P. | " | 3,762·9 | 530,054 | 3,905·2 | 519,190 |
| Iron or steel nuts, rivets, or bolts with or without threads, nut bolt, and hinge blank and T and strap hinges of all kinds, N.O.P. | " | 2,346·9 | 192,798 | 3,400·8 | 246,531 |

IRON.—TABLE 21—*Continued*

## Imports of Iron and Steel Goods Subject to Duty *Continued.*

| Material. | | Twelve months ending March, 1911. | | Twelve months ending March, 1912 | |
|---|---|---|---|---|---|
| | | Quantity. | Value. | Quantity. | Value. |
| | | | $ | | $ |
| Iron or steel scrap, wrought, being waste or refuse, including punchings, cuttings, and clippings of iron or steel plates or sheets having been in actual use; crop ends of tin plate bars, blooms, and rails, the same not having been in actual use | Tons | 30,893·8 | 408,075 | 43,543·5 | 547,942 |
| Penknives, jack-knives, and pocket knives of all kinds | $ | | [illegible] | | 88,577 |
| Knives and forks of steel, plated or not, N.O.P. | " | | [illegible] | | 222,751 |
| All other cutlery, N.O.P. | " | | [illegible] | | 749,751 |
| Guns, rifles, including air guns and air rifles (not being toys), muskets, cannons, pistols, revolvers, or other firearms | " | | [illegible] | | 776,565 |
| Bayonets, swords, fencing foils, and masks | " | | [illegible] | | 18,911 |
| Needles of any material or kind, N.O.P. | " | | 118,783 | | 110,095 |
| Steel, chrome steel | Tons. | 385·6 | [illegible] | 274·2 | 24,291 |
| Steel plate, universal mill or rolled edge plates of steel over 12" wide, imported by manufacturers of bridges or of structural work, or for use in car construction | " | 24,388·[illegible] | [illegible] | 36,886·2 | 918,388 |
| Steel in bars or sheets to be used exclusively in the manufacture of shovels when imported by the manufacturers of shovels | " | 1,556·1 | [illegible] | 1,539·4 | 38,292 |
| Rolled iron or steel, or cast steel in bars, bands, hoops, scroll, or strip, sheet, or plate of any size, thickness, or width, galvanized or coated with any material or not, and steel blanks for the manufacture of milling cutters, when of greater value than 3½ cents per pound | " | 5,333·8 | 621,431 | 4,855·6 | 575,386 |
| Steel balls adapted for use in bearings of machinery and vehicles | $ | | 15,613 | | 17,087 |
| Flat steel, cold rolled, not over ½" thick, for the manufacture of cups and cones for ball bearings | Tons | | | 33·3 | 1,861 |
| Steel wool | " | 22·6 | 2,989 | 29·8 | 3,796 |
| Tools and implements— | | | | | |
| Adzes, cleavers, hatchets, wedges, sledges, hammers, crowbars, cant-dogs and track tools, picks, mattocks and eyes and poles for the same | $ | | 67,132 | | 76,275 |
| Axes | Doz. | 7,993 | 45,361 | 11,197 | 60,158 |
| Saws | $ | | 113,401 | | 102,376 |
| Files and rasps, N.O.P. | " | | 121,165 | | 112,441 |
| Tools, hand or machine, of all kinds, N.O.P. | " | | 767,628 | | 768,685 |
| Knife blades or blanks, and table forks of iron and steel, in the rough, not handled, filed, ground, or otherwise manufactured | " | | 388 | | 154 |
| Manufactures, articles or wares of iron and steel, or of which iron and steel (or either) are the component materials of chief value, N.O.P. | " | | 7,122,976 | | 9,189,525 |
| Total | | | 73,871,113 | | 91,079,769 |

IRON.—TABLE 22.

## Imports of Iron and Steel Goods Free of Duty.

| Material. | | Twelve months ending March, 1911 | | Twelve months ending March, 1912. | |
|---|---|---|---|---|---|
| | | Quantity. | Value. | Quantity. | Value. |
| | | | $ | | $ |
| Anchors for vessels | Tons. | 305·9 | 25,362 | 268·5 | 21,597 |
| Chain, malleable sprocket or link belting | $ | | 240,704 | | 232,391 |
| Cream separators, and steel bowls for | " | | 387,340 | | 361,896 |
| Cream separators—materials which enter into the construction and form part of when imported by manufacturers of cream separators to be used in the manufacture thereof | " | | 396,501 | | 304,255 |
| Gas buoys—The following articles and materials, when imported by manufacturers of automatic gas buoys and automatic gas beacons, for use in the manufacture of such buoys and beacons for the Government of Canada or for export, viz., iron or steel tubes over 16" in diameter; flanged and dished steel heads made from boiler plate, over 5 feet in diameter; hardened steel balls, not less than 3" in diameter; acetylene gas lanterns and parts thereof, and tobin bronze in bars or rods | " | | 29,829 | | 27,933 |
| Gun barrels, in single tubes, forged, rough bored | " | | 1,372 | | 1,350 |
| Iron or steel rods over 5/16" in diameter for manufacturing of chain | Tons. | 1,385·4 | 35,461 | 1,091·1 | 29,100 |
| Iron or steel, rolled round wire rods, in the coil, not over 3/8" in diameter, when imported by wire manufacturers for use in making wire in the coil in their own factories | " | 36,032·1 | 965,912 | 43,397·3 | 1,033,397 |
| Boiler plate of iron or steel not less than 30" in width, and not less than 1/4" in thickness, for use exclusively in the manufacture of boilers | " | 15,994·8 | 492,247 | 17,683·4 | 516,947 |
| Flat galvanized iron or steel sheets | " | 19,089·9 | 1,127,087 | 24,309·1 | 1,389,343 |
| Rolled iron and steel, and cast steel in bars, band, hoop, scroll or strip, sheet or plate of any size, thickness or width: galvanized or coated with any material or not, and steel blanks for the manufacture of milling cutters, when of greater value than 3½ cts. per lb. | " | 4,157·3 | 531,804 | 4,117 | 579,320 |
| Rolled iron or steel sheets in strips, polished or not, 14 gauge and thinner, N.O.P | " | 18,160·1 | 800,034 | 12,996 | 587,259 |
| Rolled iron or steel, hoop, band, scroll, or strip, No. 14 gauge or thinner, galvanized or coated with other metal or not, N.O.P | " | 1,294·1 | 41,143 | 1,151·4 | 41,51·7 |
| Iron tubing for manufacture of extension rods for windows | $ | | 8,642 | | 7,071 |
| Iron or steel, beams, sheets or plates, ankles, knees, masts or parts thereof and cable chains for wooden, iron, steel or composite ships or vessels | Tons. | 14,166 | 417,981 | 6,849·2 | 202,550 |
| Locomotive and car wheel tires of steel in the rough | " | 9,605·5 | 451,253 | 8,354·2 | 405,993 |
| Scrap iron and scrap steel, old, and fit only to be remanufactured, being part of or recovered from any vessel wrecked in waters subject to the jurisdiction of Canada | " | 61·5 | 730 | 3 | 158 |

IRON.—TABLE 22—*Continued.*

## Imports of Iron and Steel Goods Free of Duty—*Concluded.*

| Material. | Twelve months ending March, 1911. | | Twelve months ending March, 1912. | |
|---|---|---|---|---|
| | Quantity. | Value. | Quantity. | Value. |
| Machinery:— | | $ | | $ |
| Articles of metals as follows when for use exclusively i[illegible] metallurgical operations, viz: coal cutting machines, except percussion coal cutters; co[illegible]ng machines; coal augers; rotary coal drills; core drills; mi[illegible] safety lamps and parts the[illegible] also accessories for cleaning, filling, and testing such lamps; el[illegible]e or magnetic machines for separating or concentrating iron ores; furnaces for the smelting of cop[illegible], zinc, and nickel ores; converting apparatus for metallurgical processes in metals; copper plates, plated or not, machinery for extraction of precious metals by the chlorination or cyanide process; amalgam safes; automatic ore samplers; automatic feeders; retorts, mercury pumps; pyrometers; bullion furnaces; amalgam cleaners; blast furnace blowing engines; wrought iron tubing, butt or lap welded; threaded, or coupled or not, over 4" in diameter; and integral parts of all machinery mentioned in this item; blowers of iron or steel for use in the smelting of ores, or in the reduction, separation, or refining of metals, rotary kilns, revolving roasters, and furnaces of metal designed for roasting ore, mineral rock or clay; furnace slag trucks, and slag pots of a class or kind not made in Canada, buddles, vanners, and slime tables adapted for use in gold mining ........ $ | ........ | 704,878 | ........ | 822,061 |
| Appliances of iron and steel, of a class or kind not made in Canada, and elevators and machinery of floating dredges, when for use exclusively in alluvial gold mining ........ " | ........ | 251,041 | ........ | 292,178 |
| Well-drilling, and apparatus of a class or kind not made in Canada for drilling for water, natural gas or oil, and for prospecting for minerals, not to include motive power ........ " | ........ | 209,717 | ........ | 195,767 |
| Briquette making machines ........ " | ........ | 27,582 | ........ | 7,971 |
| Newspaper printing presses, of not less value by retail than $1,500 each, of a class or kind not made in Canada No. | 114 | 504,556 | 141 | 599,626 |
| Machinery or tools not manufactured in Canada up to the required standard necessary for any factory to be established in Canada for the manufacture of rifles for the Government of Canada ........ $ | ........ | 6,166 | ........ | 33,204 |
| All materials, or parts in the rough, unfinished, and screws, nuts, bands, and springs to be used in rifles to be manufactured at any such factory for the Government of Canada ........ " | ........ | 50,067 | ........ | 37,047 |
| Machinery of every kind, and structural iron and steel for use in the construction and equipment of factories for the manufacture of sugar from beet root ........ " | ........ | 29,903 | ........ | 89,717 |
| Machinery of a class or kind not made in Canada and parts thereof, for the manufacture of twine cordage, or linen, or for the preparation of flax fibre ........ " | ........ | 43,129 | ........ | 35,760 |
| Mould boards or shares, or plough plates, land sides, or other plates for agricultural implements, when cut to shape from rolled plates of steel, but not moulded, punched, polished, or otherwise manufactured... Tons. | 8,202·6 | 512,857 | 8,041·3 | 520,395 |

| | | | | | |
|---|---|---|---|---|---|
| Steel balls adapted for use on bearings on machinery and vehicles | $ | | 3,206 | | 4,820 |
| Steel, rolled, for saws and straw cutters, not tempered, or ground, nor further manufactured than cut to sh: without indented edges | | | | | |
| Steel strips, and flat steel wire when imported into Canada by manufacturers of buckthorn and plain strip fencing for use exclusively in their own factories in the manufacture thereof | Tons. | 1,144·8 | 181,866 | 1,079·2 | 161,955 |
| Steel wire, Bessemer soft drawn spring of Nos. 10, 12, and 13 gauge, respectively, and homo steel spring wire of Nos. 11 and 12 gauge, respectively, when imported by manufacturers of wire mattresses, to be used exclusively in their own factories in the manufacture of such articles | “ | 0·4 | 32 | 18·2 | 660 |
| Steel, crucible sheet, 11 to 16 gauge, 2½″ to 18″ wide for the manufacture of mower and reaper knives when imported by manufacturers thereof for use exclusively in the manufacture of such articles in their own factories | “ | 458·7 | 22,831 | 532·7 | 25,771 |
| Steel No. 20 gauge and thinner, but not thinner than 30 gauge, for the manufacture of corset steels, clock springs, and shoe shanks, imported by manufacturers of such articles for exclusive use in the manufacture of such articles in their own factories | “ | 705·9 | 57,518 | 724·5 | 55,957 |
| Steel wire, flat, of 16 gauge or thinner, imported by the manufacturers of crinoline, and corset wires and dress stays, for use exclusively in the manufacture of such articles in their own factories | “ | 55·9 | 2,771 | 36·6 | 2,444 |
| Steel, No. 12 gauge and thinner, but not thinner than No. 30 gauge, for the manufacture of buckle clasps, bed fasts, furniture casters, and ice-creepers, imported by the manufacturers of such articles, for use exclusively in the manufacture of such articles in their own factories | “ | 314·3 | 40,240 | 389·6 | 48,449 |
| Steel No. 24 and 17 gauge, in the sheets 63″ long and from 18″ to 32″ wide, when imported by the manufacturers of tubular bow sockets for use exclusively in the manufacture of such articles in their own factories | “ | 235·2 | 14,268 | 179·9 | 8,427 |
| Steel springs for the manufacture of surgical trusses, when imported by manufacturers of surgical trusses for use exclusively in the manufacture thereof in their own factories | “ | 72 | 3,132 | 89·5 | 3,635 |
| Swedish rolled iron, and Swedish rolled steel nail rods, under half an inch in diameter, for the manufacture of horseshoe nails | “ | 0·6 | 438 | 0·5 | 431 |
| Steel seamless tubing valued at not less than 3½ cents per pound | “ | 1,021 | 47,039 | 1,719·7 | 68,951 |
| Steel rolled or drawn square tubing adapted for use in the manufacture of agricultural implements | “ | 137·6 | 20,015 | 134·2 | 17,688 |
| Steel or iron tubes, rolled, not joined or welded, not more than 1½″ diameter, N.O.P. | $<br>“ | | 17,777 | | 24,529 |
| Seamless steel, or wrought iron boiler tubes, including flues and corrugated tubes for marine boilers | “ | | 573,579 | | 658,229 |
| Steel imported by manufacturers of rifles for use in manufacturing rough parts of rifles, when such parts are to be used in rifles for the government of Canada | $ | | | | |
| Barbed fencing wire of iron or steel | Tons. | 17,255·4 | 743,527 | 18,831·3 | 766,255 |
| Wire crucible cast steel, valued at not less than 6 cents per pound | “ | 8·5 | 2,479 | 6·5 | 1,826 |
| Wire, curved or not, galvanized iron or steel, Nos. 9, 12, and 13 gauge | “ | 31,869·7 | 1,243,580 | 34,691 | 1,255,932 |
| Wire, steel, valued at not less than 2¾ cents per pound when imported by manufacturers of rope for use exclusively in the manufacture of rope | “ | 2,315·6 | 180,832 | 28·6 | 7,301 |
| Total | | | 11,448,428 | | 11,489,063 |

IRON.—TABLE 23.

## Imports of Iron and Steel into Canada from the United States.*

| Material | | Twelve months ending June, 1911. | | Twelve months ending June, 1912. | |
|---|---|---|---|---|---|
| | | Quantity. | Value. | Quantity. | Value. |
| | | | $ | | $ |
| Pig iron | Short tons | 145,867·7 | 2,090,722 | 157,480·9 | 1,979,355 |
| Scrap and old, fit only for remanufacture | " | 48,349·3 | 609,191 | 64,365·3 | 737,167 |
| Bar iron | " | 11,157·7 | 363,283 | 9,591·9 | 308,745 |
| *Bars or rods of steel—* | | | | | |
| Wire rods | " | 19,825·9 | 527,306 | 53,582·9 | 1,412,910 |
| All other | " | 92,268·0 | 2,822,424 | 95,215·9 | 2,859,441 |
| Billets, ingots, and blooms of steel | " | 56,433·4 | 1,113,957 | 60,008·5 | 1,200,710 |
| Hoop, band, and scroll | " | ‡ | ‡ | 7,206·2 | 281,946 |
| Steel rails for railways | " | 43,752·8 | 1,168,101 | 132,973·1 | 3,369,894 |
| Sheets and plates (iron) | " | 23,894·2 | 1,139,918 | 43,790·6 | 2,030,648 |
| Sheets and plates (steel) | " | 174,055·9 | 6,437,314 | 209,207·2 | 7,457,232 |
| Sheets and plates (tin plates, terne plates, and taggers tin) | " | 23,008·8 | 1,607,458 | 42,336·8 | 2,985,065 |
| Structural iron and steel | " | 89,201·3 | 3,496,033 | 144,721·9 | 5,150,353 |
| Wire (barbed) | " | 16,182 | 707,893 | 21,497·9 | 895,725 |
| Wire (all other) | " | 35,097·6 | 1,483,075 | 43,623·2 | 1,750,586 |
| *Nails and spikes—* | | | | | |
| Cut | " | 1,854·9 | 56,034 | 5,419·6 | 159,215 |
| Wire | " | 376 | 22,968 | 1,245·9 | 52,498 |
| All other, including tacks | " | 845·9 | 56,163 | 3,113·1 | 176,371 |
| Pipes and fittings | " | 36,264·4 | 1,640,592 | 76,248·5 | 3,578,892 |
| Radiators and cast iron house heating boilers | " | 3,090·6 | 201,989 | 3,819·9 | 250,552 |
| | | 821,526·4 | 25,544,421 | 1,175,464·3 | 36,637,305 |

*Compiled from 'Commerce and Navigation of the United States, 1911,' Washington, D.C.
‡Included in "All other manufactures of" in 1911.

IRON.—TABLE 23—*Continued.*

## Imports of Iron and Steel into Canada from the United States.*

| Material. | | 1911. | | 1912. | |
|---|---|---|---|---|---|
| | | Quantity. | Value. | Quantity. | Value. |
| | | | $ | | $ |
| Builders' hardware and tools:— | | | | | |
| Locks, hinges, and other builders' hardware | | | 1,560,793 | | 1,762,066 |
| Saws | | | 283,785 | | 267,810 |
| Tools not elsewhere specified | | | 1,417,144 | | 1,686,924 |
| Car wheels | No. | 5,976 | 71,588 | 3,749 | 36,021 |
| Castings, not elsewhere specified | | | 1,437,080 | | 1,312,729 |
| Cutlery:— | | | | | |
| Table | $ | | † | | 27,841 |
| All other | " | | 123,231 | | 175,666 |
| Firearms | " | | 416,129 | | 503,710 |
| Machinery, machines and parts of | | | | | |
| Adding machines | " | | 320,326 | | 288,617 |
| Brewers' machinery | " | | 112,405 | | 112,627 |
| Cash registers | No. | 2,268 | 197,597 | 1,026 | 81,234 |
| Electrical machinery | $ | | 1,664,668 | | 1,869,761 |
| Laundry machinery | " | | 139,008 | | 167,735 |
| Metal working machinery (including metal working machine tools) | $ | | 766,127 | | 1,362,326 |
| Mining machinery | " | | 912,270 | | 1,224,011 |
| Printing presses and parts of | " | | 1,057,876 | | 1,265,657 |
| Pumps, and pumping machinery | " | | 634,343 | | 701,144 |
| Refrigerating machinery, ice-making machinery, etc | $ | | 73,193 | | 170,564 |
| Sawmill machinery | " | | ‡ | | 382,752 |
| Sewing machines and parts of | " | | 436,059 | | 484,687 |
| Shoe machinery | " | | 266,998 | | 274,388 |
| Steam and other power engines and parts of: | | | | | |
| Electric-locomotives | No. | (a) | 3,941,450 | 8 | 46,745 |
| Gas—stationary | " | | | 766 | 130,713 |
| Gasoline—automobile | " | | | 6,844 | 769,195 |
| " —marine | " | | | 1,842 | 305,842 |
| " —stationary | " | | | 5,096 | 754,570 |
| " —traction | " | | | 1,710 | 3,166,507 |
| Steam—locomotives | " | | | 107 | 472,046 |
| " —marine | " | | | 3 | 18,000 |
| " —stationary | " | | | 245 | 247,729 |
| " —traction | " | | | 259 | 478,526 |
| All other engines and parts of | $ | | 1,585,231 | | 1,910,440 |
| Sugar-mill machinery | " | | 4,883 | | 24,431 |
| Typewriting machines and parts of | " | | 647,152 | | 944,600 |
| Windmills and parts of | " | | 78,692 | | 71,044 |
| Woodworking machinery all other | " | | 454,596 | | 375,446 |
| All other | " | | 10,383,946 | | 10,627,184 |
| Sales | No. | 3,967 | 209,092 | 4,320 | 217,860 |
| Scales and balances | $ | | 138,674 | | 159,851 |
| Stoves, ranges, and parts of | " | | 832,447 | | 1,041,935 |
| All other manufactures of | " | | 8,569,792 | | 10,100,055 |
| | | | 38,735,575 | | 46,020,989 |
| Total value | | | 64,280,996 | | 82,658,294 |

†In 1911, included in 'All other cutlery.'
‡In 1911, included in 'All other wood-working' machinery.
(a) Includes 'Steam and other power engines and parts of', as follows:—
Locomotives, 69 valued at $345,618; stationary engines, 4016 valued at $852,685; traction engines, 1590 valued at $2,743,147.